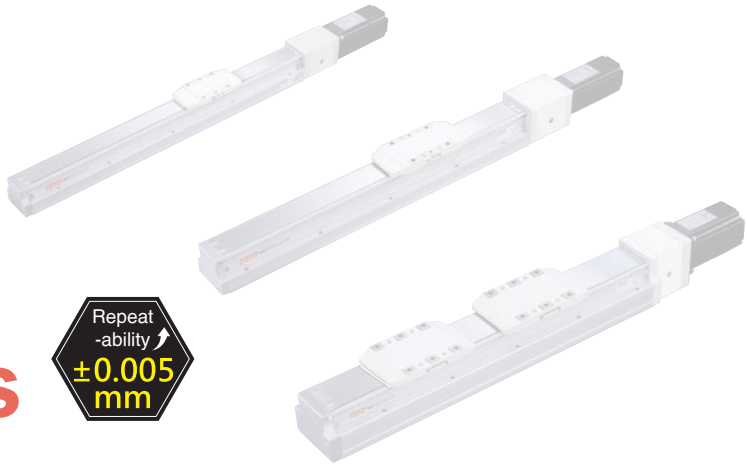
Memo



GTH Series

Repeat -ability ±0.005 mm

Standard Environment
Integrated Linear Bearing Ball Screw Actuator

CONTENTS

Spec Index of Electric Actuator

GTH Built - in Linear Motion Guide Ball Screw Actuator - Slider Type

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed*1 (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
Standard Environment	Ball screw	GTH3	30W	30	±0.005	6	2	13	5	100
							8	10	2	480
		GTH4	50W	44	±0.005	10	2	25	8	100
							6	20	5	360
							12	12	2	720
			100W				2	25	8	100
							6	20	8	360
							12	12	3.5	720
		GTH5	100W	54	±0.005	12	2	30	10	100
							5	30	10	300
							10	15	5	600
							20	10	2.5	1200
		GTH8	200W	82	±0.005	16	5	50	15	300
							10	30	8	600
			400W				20	18	3	1200
		GTH12	400W	120	±0.005	16	5	110	33	300
							10	88	22	600
							20	40	10	1200
							32	30	8	1920
		GTH12M	400W	120	±0.005	16	5	110	33	300
							10	88	22	600
							20	40	10	1200
							32	30	8	1920

*1:The highest speed is based on the maximum servo motor's rpm (3000 or 3600).
*2:Max RPM is based on limitations of the ballnut or suggested servo motor limits.
*3:Max speed is based on max RPM of the ballscrew before whipping occurs. This could permanently damage the ballscrew.

Dual Carriage Synchronous Movement In Reverse Direction

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed*1 (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
Standard Environment	Ball screw	GTH5S	100W	54	±0.005	12	2	30	10	100
		GTH8S	200W	82	±0.005	16	5	50	15	300
			400W							

*1:The highest speed is based on the maximum servo motor's rpm (3000 or 3600).
*2:Max RPM is based on limitations of the ballnut or suggested servo motor limits.
*3:Max speed is based on max RPM of the ballscrew before whipping occurs. This could permanently damage the ballscrew.

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Stroke(mm) & Maximum Speed(mm/s)*2	Speed	Page

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	Page
100					90	80	70	60	50	40																		
480					400	320	280	240	200	160																		
100												90	80	70	60	50	43	40	37	33								087
360										330	320	270	240	210	180	150	130	120	110	100								
720										660	640	540	480	420	360	300	260	240	220	200								
100												90	80	70	60	50	43	40	37	33								
360										330	320	270	240	210	180	150	130	120	110	100								
720										660	640	540	480	420	360	300	260	240	220	200								
100													90	80	70	60	50	47	40	37	33							095
300											292	250	225	200	175	150	125	117	100	92	83							
600											583	500	450	400	350	300	250	233	200	183	167							
1200											1167	1000	900	800	700	600	500	467	400	367	333							
300													292	250		225	200	175	150	133	117	108	100	92	83			099
600													583	500		450	400	350	300	267	233	217	200	183	167			
1200													1167	1000		900	800	700	600	533	467	433	400	367	333			
300															275	250	225	200	175	167	158	142	133	125	117			107
600															550	500	450	400	350	333	317	283	267	250	233			
1200															1100	1000	900	800	700	667	633	567	533	500	467			
1920															1760	1600	1440	1280	1120	1067	1013	907	853	800	747			

Stroke	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	Page
300													287.5	255	230	205	190	175	155	150	130	125	115	105	100	95	85	
600													575	515	465	415	380	350	315	300	265	250	230	215	200	190	175	
1200													1150	1030	930	830	765	700	630	600	530	500	465	430	400	380	350	
1920														1785	1600	1440	1330	1170	1120	1010	900	850	800	745	690	640	585	

Stroke(mm) & Maximum Speed(mm/s)*2	Speed	Page

Stroke	25	100	150	200	250	300	350	400	450	500	525	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	Page
100																												099
300																												087

Spec Index of Electric Actuator

GTH Built - in Linear Motion Guide Ball Screw Actuator - Slider Type

Dual Carriage

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed*1 (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
Standard Environment	Ball screw	GTH4D	50W	44	±0.005	10	2	25	8	100
							6	20	5	360
							12	12	2	720
			100W				2	25	8	100
							6	20	8	360
							12	12	3.5	720
		GTH5D	100W	54	±0.005	12	2	30	10	100
							5	30	10	300
							10	15	5	600
							20	10	2.5	1200
		GTH8D	200W	82	±0.005	16	5	50	15	300
							10	30	8	600
			400W				20	18	3	1200
		GTH12D	400W	120	±0.005	16	5	110	33	300
							10	88	22	600
							20	40	10	1200
							32	30	8	1920

*1:The highest speed is based on the maximum servo motor's rpm (3000 or 3600).
*2:Max RPM is based on limitations of the ballnut or suggested servo motor limits.
*3:Max speed is based on max RPM of the ballscrew before whipping occurs. This could permanently damage the ballscrew.

Steel body

Env.	Drive Type	Model No.	Motor Output (w)	Width (mm)	Repeatability (mm)	Ball Screw Spec		Maximum Payload(kg)		Max. Speed*1 (mm/s)
						Outer Dia.(mm)	Lead(mm)	Horizontal	Vertical	
Standard Environment	Ball screw	GTH3K	30W	30	±0.005	6	2	13	5	100
							8	10	2	480
		GTH4K	50W	44	±0.005	10	2	25	8	100
							6	20	5	360
							12	12	2	720
			100W				2	25	8	100
							6	20	8	360
							12	12	3.5	720
		GTH5K	100W	54	±0.005	12	2	30	10	100
							5	30	10	300
							10	15	5	600
							20	10	2.5	1200
		GTH8K	200W	82	±0.005	16	5	50	15	300
							10	30	8	600
			400W				20	18	3	1200

*1:The highest speed is based on the maximum servo motor's rpm (3000 or 3600).
*2:Max RPM is based on limitations of the ballnut or suggested servo motor limits.
*3:Max speed is based on max RPM of the ballscrew before whipping occurs. This could permanently damage the ballscrew.

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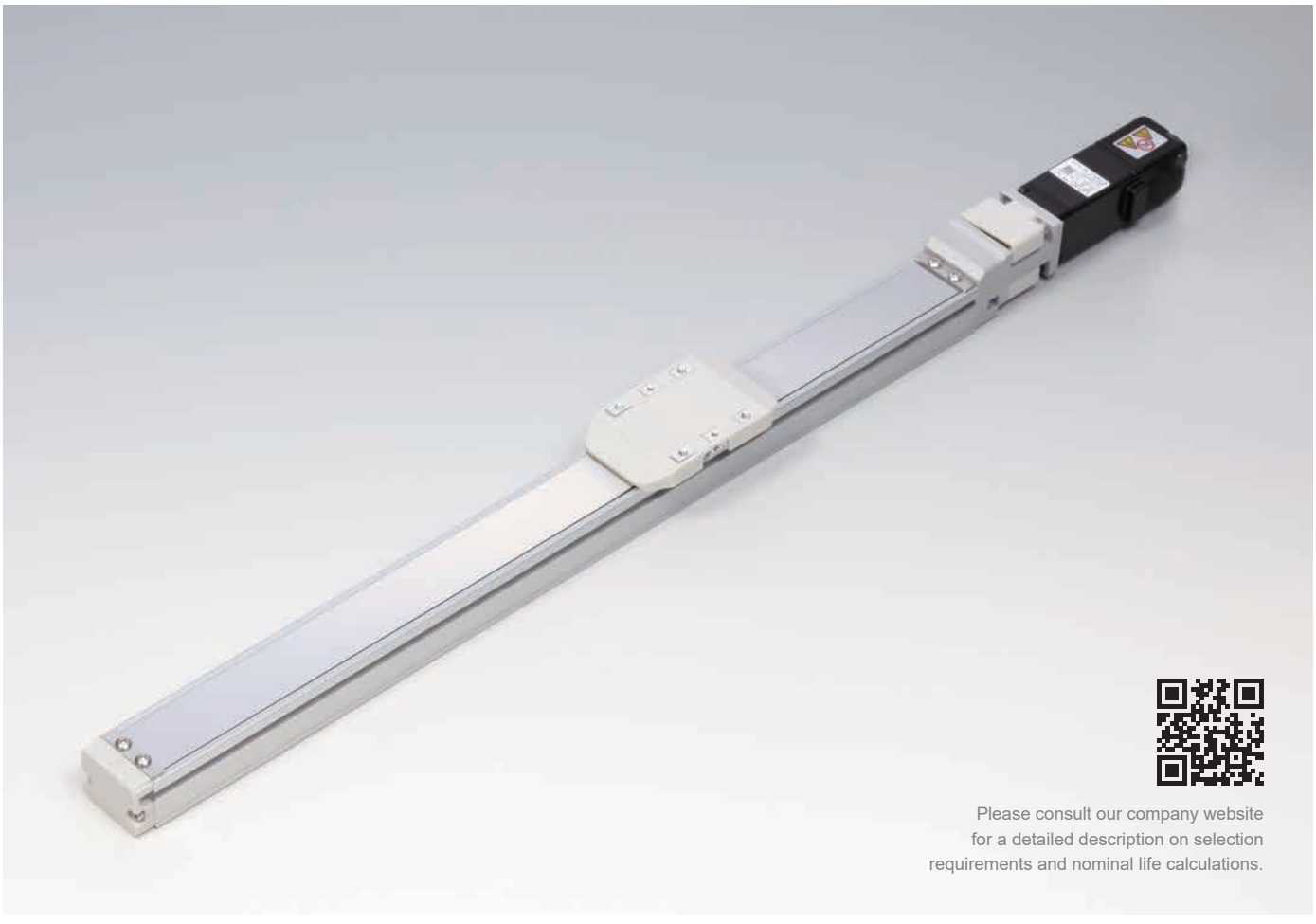
Toll-Free Number

Stroke(mm) & Maximum Speed(mm/s)*2																														Page
Stroke	40	50	60	100	150	150	200	250	300	350	310	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
				100											90	80	70	60	50	43	40	37	33								087
				360									330	320	270	240	210	180	150	130	120	110	100								
				720									660	640	540	480	420	360	300	260	240	220	200								
				100											90	80	70	60	50	43	40	37	33								
				360									330	320	270	240	210	180	150	130	120	110	100								
				720									660	640	540	480	420	360	300	260	240	220	200								
Stroke	40	50	60	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	
				100								90	80	70	60	50	47	40	37	33											095
				300						292	250	225	200	175	150	125	117	100	92	83											
				600						583	500	450	400	350	300	250	233	200	183	167											
				1200						1167	1000	900	800	700	600	500	467	400	367	333											
Stroke	40	50	60	100	150	150	200	250	300	350	310	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
				300											292	250	225	200	175	150	133	117	108	100	92	83					099
				600											583	500	450	400	350	300	267	233	217	200	183	167					
				1200											1167	1000	900	800	700	600	533	467	433	400	367	333					
Stroke	40	50	60	90	140	190	240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	
				300								250			225	200	175	167	158	142	133	125	117								107
				600								500			450	400	350	333	317	283	267	250	233								
				1200								1000			900	800	700	667	633	567	533	500	467								
				1920								1600			1440	1280	1120	1067	1013	907	853	800	747								

Stroke(mm) & Maximum Speed(mm/s)*2																													Page
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350		
		100			90	80																							
		480			400	320																							
		100										90	80	70	60	50													087
		360								330	320	270	240	210	180	150													
		720								660	640	540	480	420	360	300													
		100										90	80	70	60	50													
		360								330	320	270	240	210	180	150													
		720								660	640	540	480	420	360	300													
		100											90	80	70	60													095
		300									292	250	225	200	175	150													
		600									583	500	450	400	350	300													
		1200									1167	1000	900	800	700	600													
		300											292	250	250	225	200	175	150	133	117	108							099
		600											583	500	500	450	400	350	300	267	233	217							
		1200											1167	1000	1000	900	800	700	600	533	467	433							

GTH3

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH3 - L2 - 100 - BC - M03B - C4 - 0001

Model

Special Order No.

Stroke

50-500mm
50mm increments

Ball Screw Lead

2	2mm
8	8mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	03	30W	B *3
Y	Yaskawa			
25M500	25□ Shaft Ø5			
25M500A	25□ Shaft Ø5 *2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

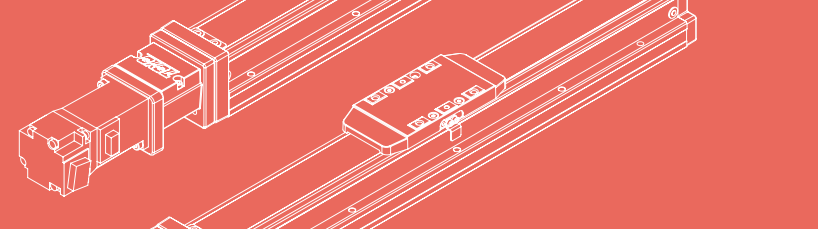
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

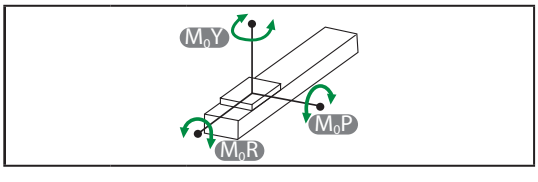


Specification

Item						
	Ball screw	Outer dia. & Precision grade		mm	Ø6 & C7 Rolled Ballscrews	
		Lead		mm	2	8
		Maximum Rotating speed※1		rpm	3000	3600
		Maximum linear speed※1		mm/s	100	480
		Basic dynamic load rating Ca		N	1811	862
		Basic static load rating Coa		N	2774	1099
		Load factor			1.2	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	3144	
			1000 Km of travel	N	1459	
			10000 Km of travel	N	677	
		Static horizontal		N	6707	
	Fixed bearing	Basic dynamic load rating Cr		N	1470	
		Static load rating Cor		N	535	
	Common Spec	Repeatability		mm	±0.005	
		Start torpue		N.cm	2	
		Allowable input torque		N.m	1.1	
		Maximum acceleration		m/s^2	10	
		Friction coefficient			0.03	
		Stroke (increments)		mm	50-500 (50 increments)	
		Ambient temperature※2		°C	0~+40	

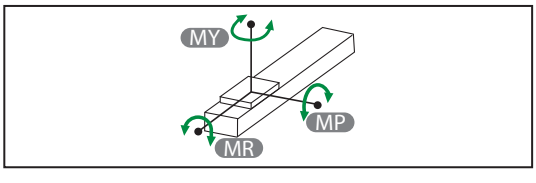
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



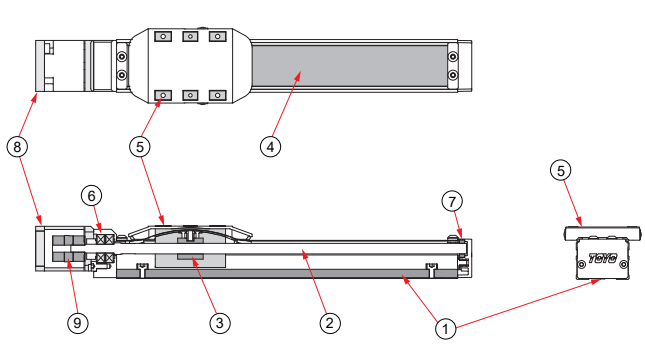
M_0Y	N.m	39
M_0P	N.m	39
M_0R	N.m	44

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	9.6	4.5	2.1
MP	N.m	9.6	4.5	2.1
MR	N.m	10.8	5	2.3

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

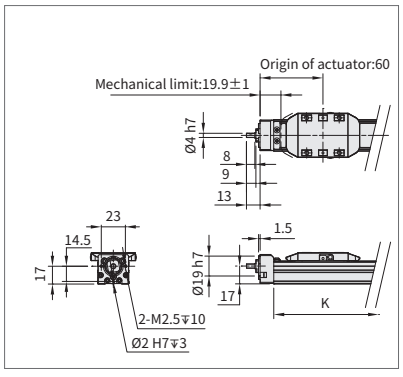
GTH3

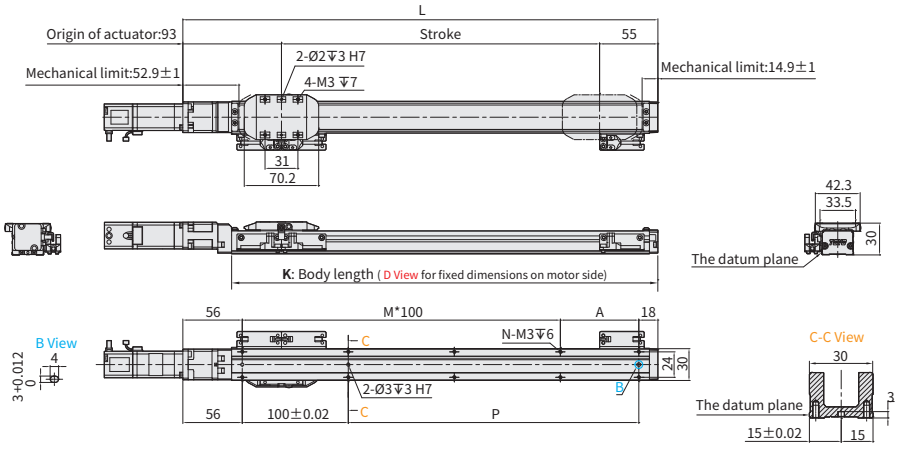
▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

D-View
K Style - No motor mount or coupling



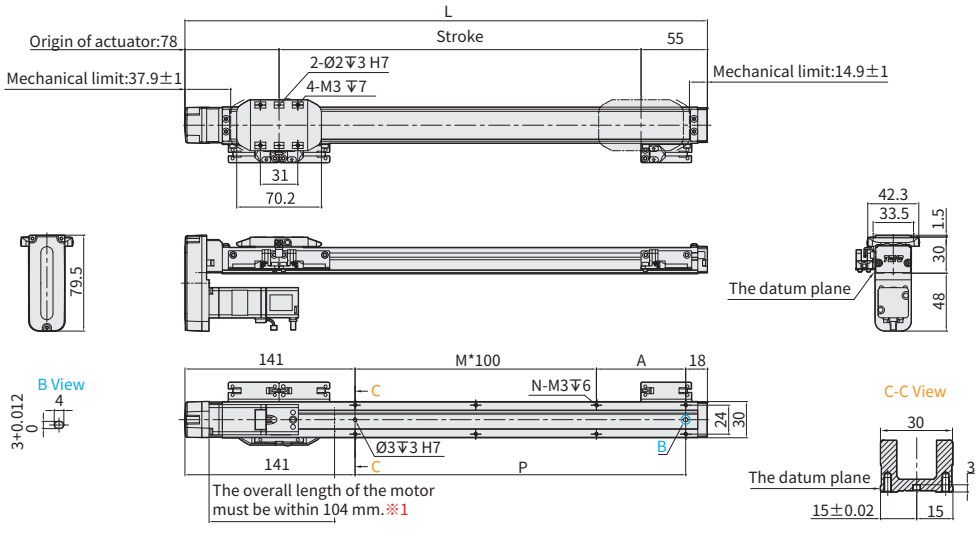


Stroke		50	100	150	200	250	300	350	400	450	500
Limit Stroke (±1)		60	110	160	210	260	310	360	410	460	510
L		198	248	298	348	398	448	498	548	598	648
A		24	74	24	74	24	74	24	74	24	74
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		24	74	124	174	224	274	324	374	424	474
KG※1		0.29	0.34	0.4	0.44	0.49	0.55	0.61	0.67	0.73	0.79
K		165	215	265	315	365	415	465	515	565	615
Linear Speed mm/s	Lead 2	100				90	80	70	60	50	40
	Lead 8	480				400	320	280	240	200	160

※ 1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

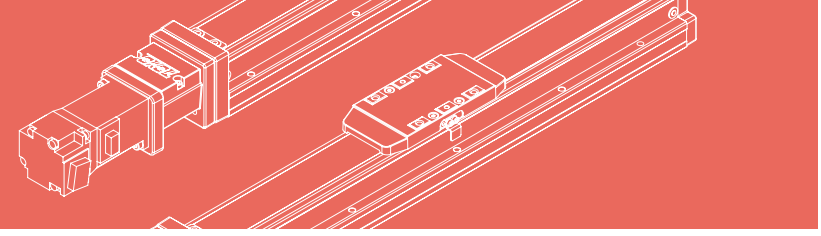
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500
Limit Stroke (±1)		60	110	160	210	260	310	360	410	460	510
L		183	233	283	333	383	433	483	533	583	633
A		24	74	24	74	24	74	24	74	24	74
M		0	0	1	1	2	2	3	3	4	4
N		4	4	6	6	8	8	10	10	12	12
P		24	74	124	174	224	274	324	374	424	474
KG		0.38	0.48	0.57	0.66	0.76	0.85	0.94	1.03	1.12	1.21
Linear Speed mm/s	Lead 2	100				90	80	70	60	50	40
	Lead 8	480				400	320	280	240	200	160

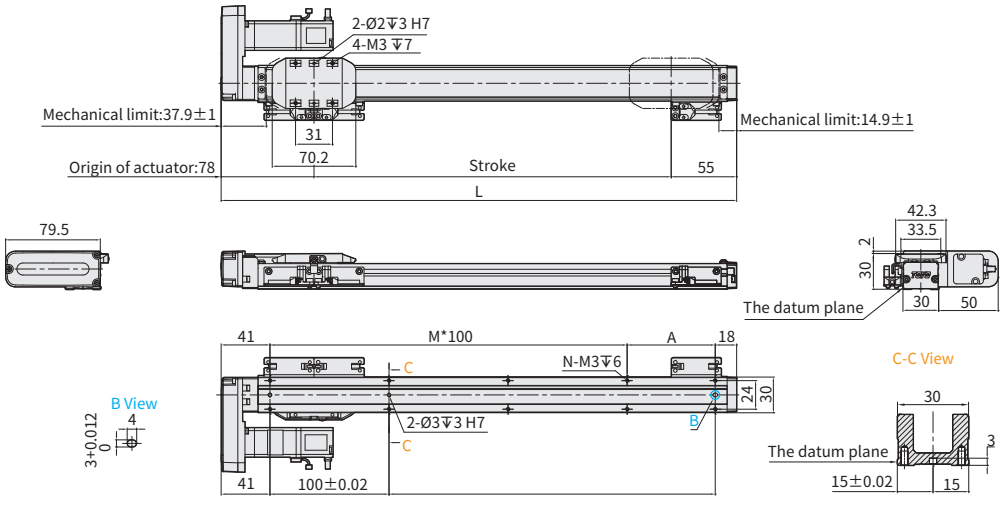
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

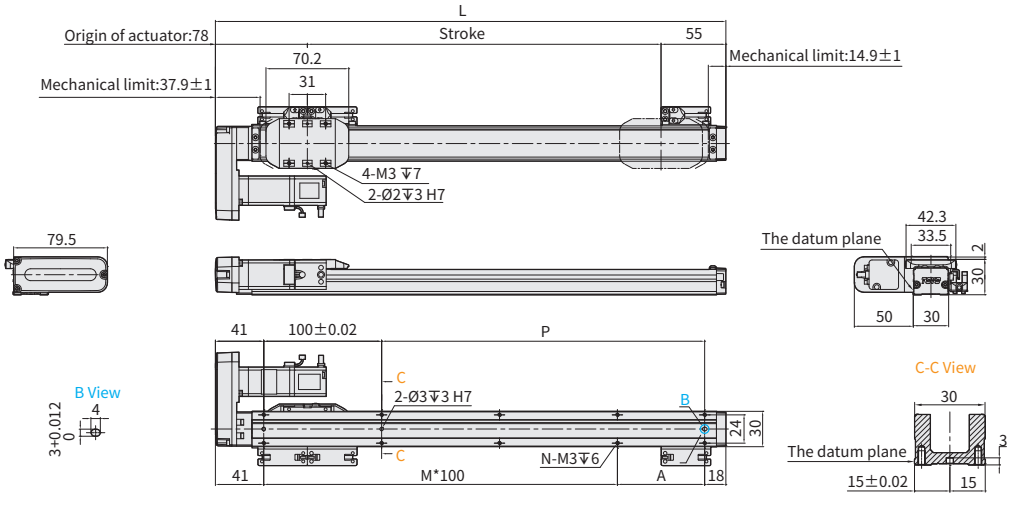


Stroke		50	100	150	200	250	300	350	400	450	500
Limit Stroke (±1)		60	110	160	210	260	310	360	410	460	510
L		183	233	283	333	383	433	483	533	583	633
A		24	74	24	74	24	74	24	74	24	74
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		24	74	124	174	224	274	324	374	424	474
KG		0.38	0.48	0.57	0.66	0.76	0.85	0.94	1.03	1.12	1.21
Linear Speed mm/s	Lead 2	100				90	80	70	60	50	40
	Lead 8	480				400	320	280	240	200	160

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500
Limit Stroke (±1)		60	110	160	210	260	310	360	410	460	510
L		183	233	283	333	383	433	483	533	583	633
A		24	74	24	74	24	74	24	74	24	74
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		24	74	124	174	224	274	324	374	424	474
KG		0.38	0.48	0.57	0.66	0.76	0.85	0.94	1.03	1.12	1.21
Linear Speed mm/s	Lead 2	100				90	80	70	60	50	40
	Lead 8	480				400	320	280	240	200	160

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4 - L2 - 100 - BC - M05B - C4 - 0001

Model

Stroke

50-1000mm
50mm increments

Special Order No.

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	50W	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5*2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

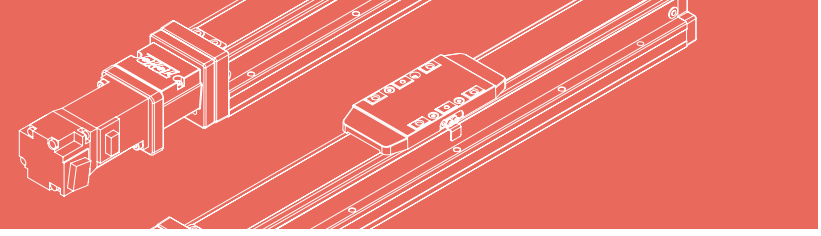
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

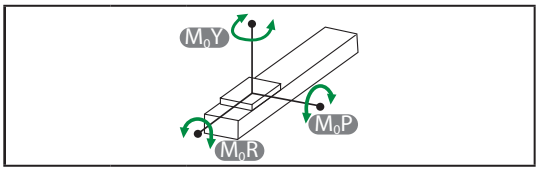


Specification

Item							
	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7 Rolled Ballscrews		
		Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	4835		
			1000 Km of travel	N	2246		
			10000 Km of travel	N	1040		
		Static horizontal		N	12678		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-1000 (50 increments)		
		Ambient temperature※2		°C	0~+40		

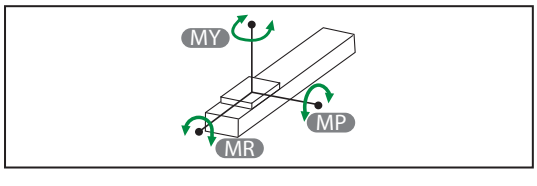
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



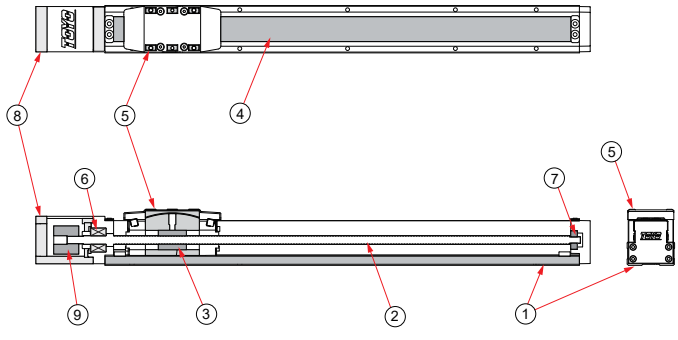
M_0Y	N.m	79
M_0P	N.m	79
M_0R	N.m	116

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



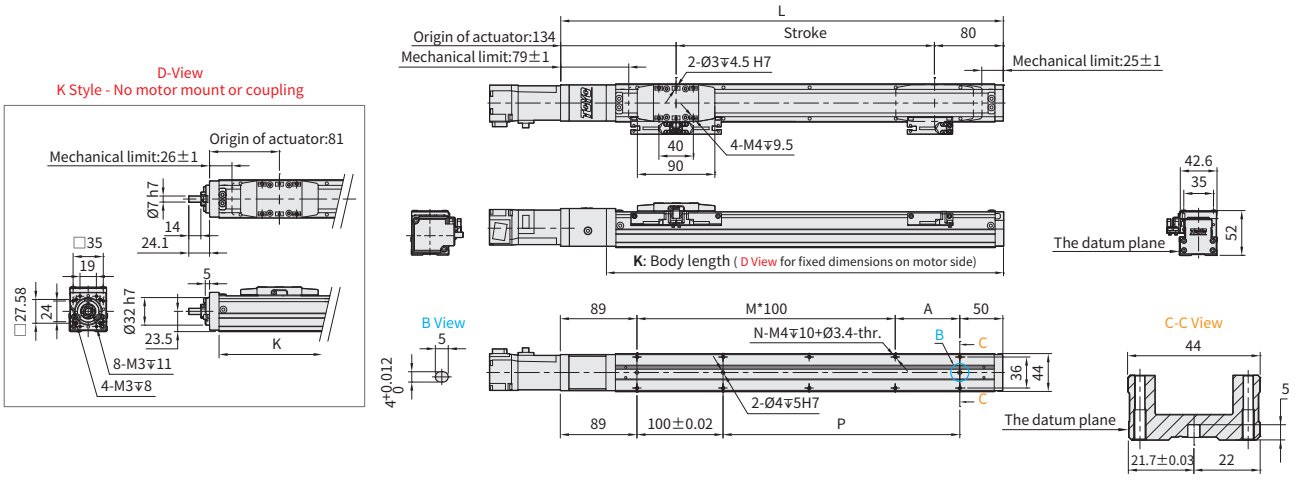
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH4

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

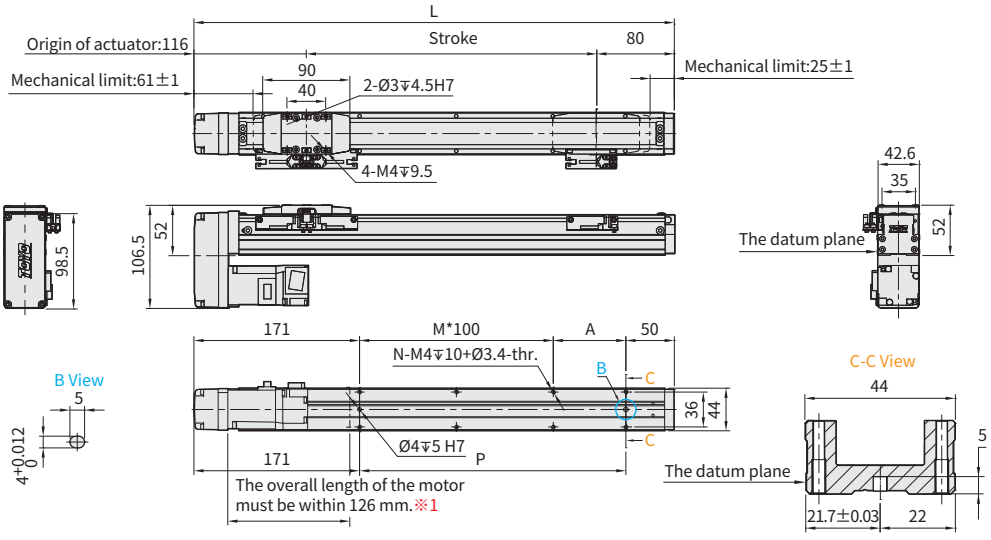


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG※1		0.95	1.12	1.29	1.47	1.65	1.83	2.01	2.19	2.37	2.55	2.73	2.91	3.09	3.27	3.45	3.63	3.81	4	4.18	4.36
K		211	261	311	361	411	461	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

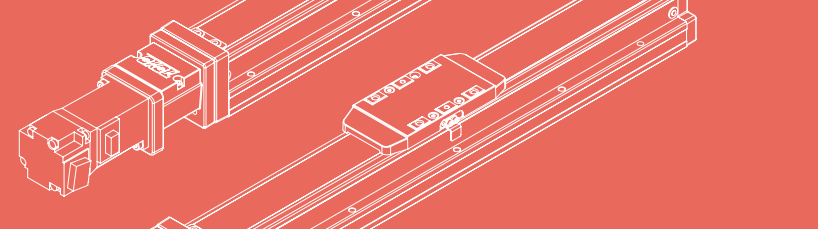
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

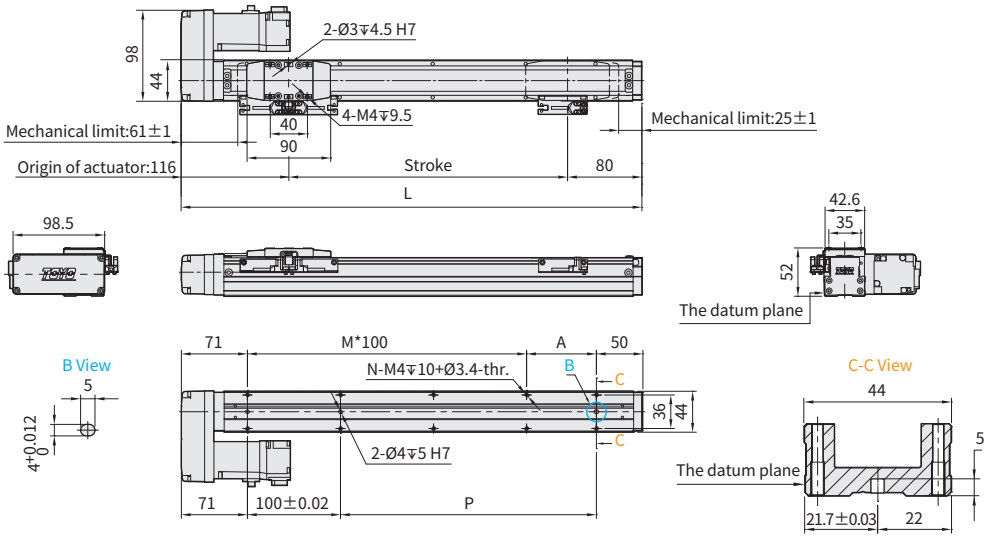
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



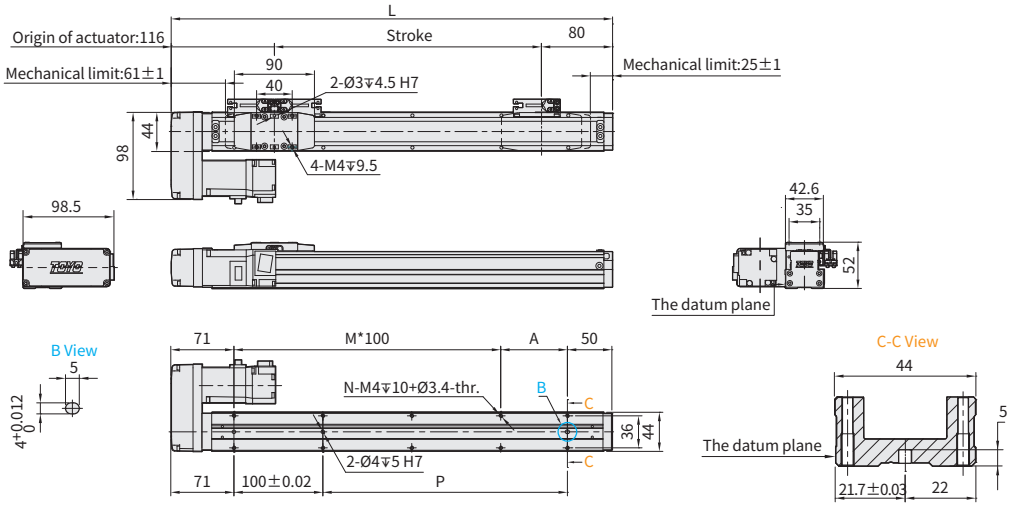
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH4

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4 - L2 - 100 - BC - M10B - C4 - 0001

Model

Special Order No.

Stroke

50-1000mm
50mm increments

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5*2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
X	Others*1			
Without Attachment kit				
K	No Motor Flange & Coupling*4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

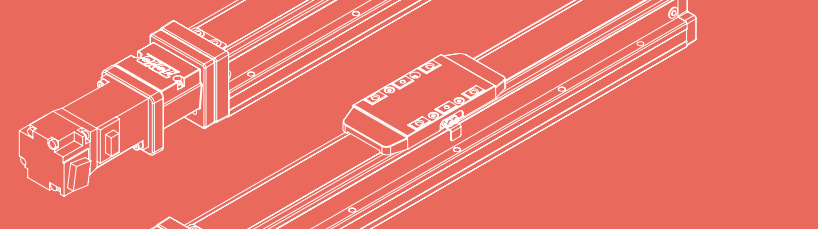
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

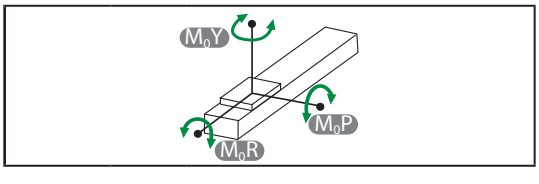


Specification

Item				mm	Ø10 & C7 Rolled Ballscrews		
	Ball screw	Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	4835		
			1000 Km of travel	N	2246		
			10000 Km of travel	N	1040		
		Static horizontal		N	12678		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-1000		
		Ambient temperature※2		°C	0~+40		

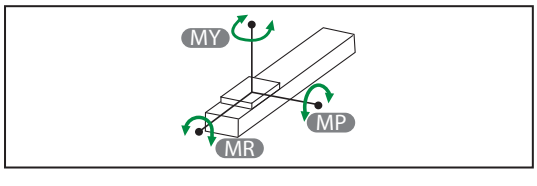
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



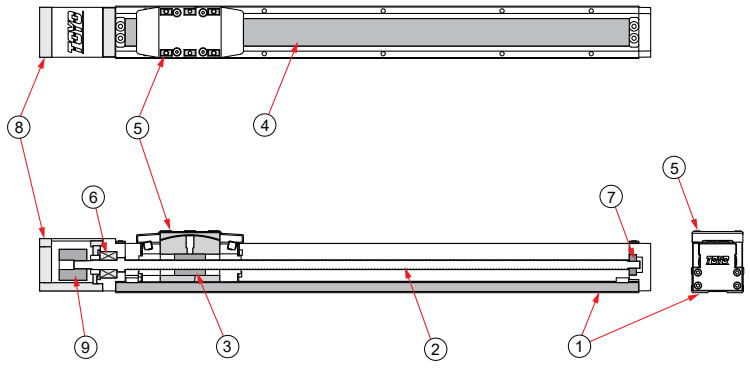
M_0Y	N.m	79
M_0P	N.m	79
M_0R	N.m	116

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



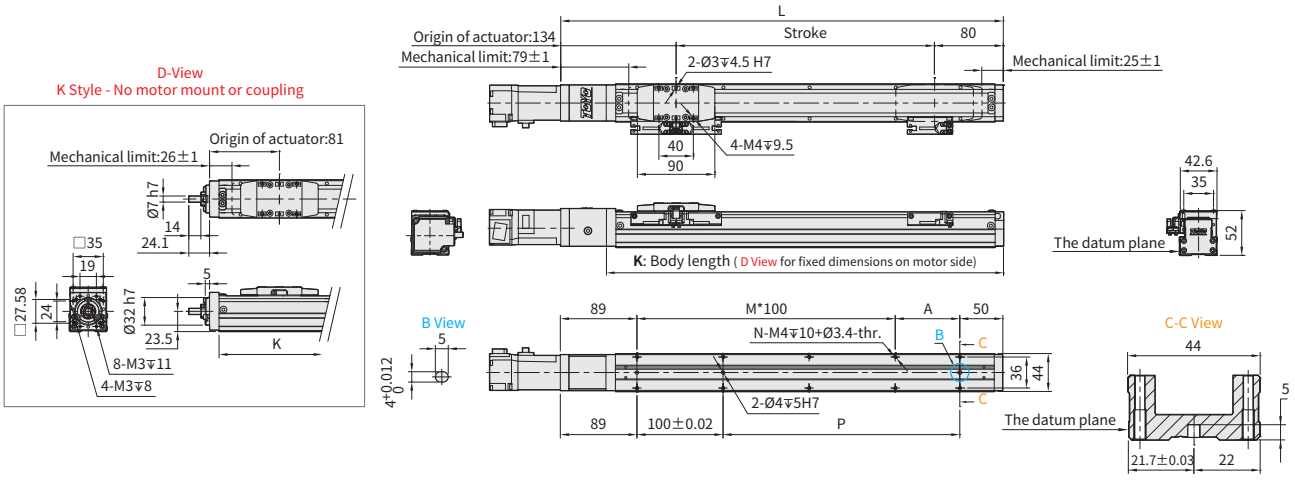
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH4

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

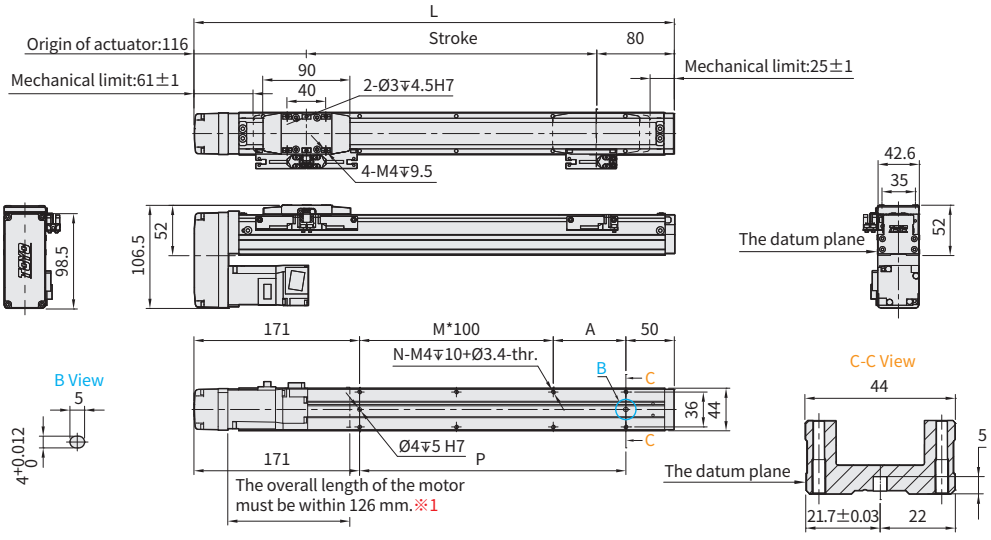


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG※1		0.95	1.12	1.29	1.47	1.65	1.83	2.01	2.19	2.37	2.55	2.73	2.91	3.09	3.27	3.45	3.63	3.81	4	4.18	4.36
K		211	261	311	361	411	461	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

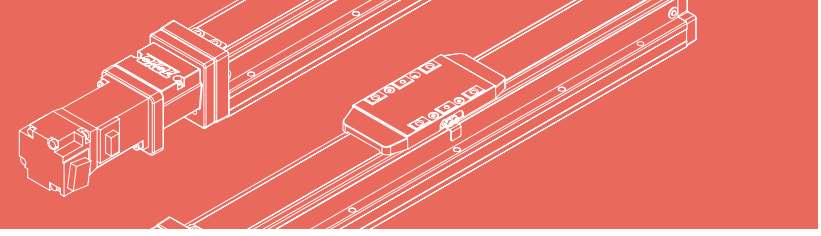
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

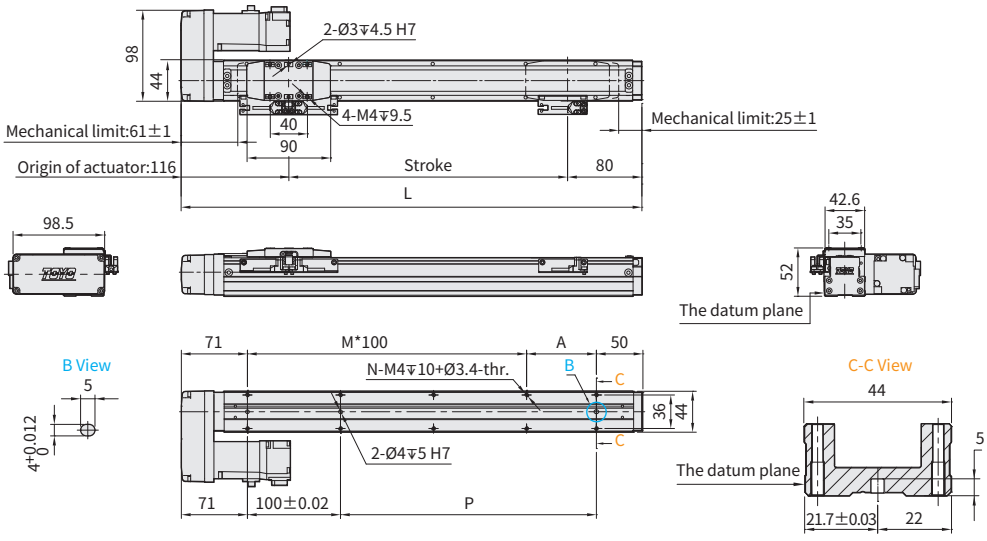
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



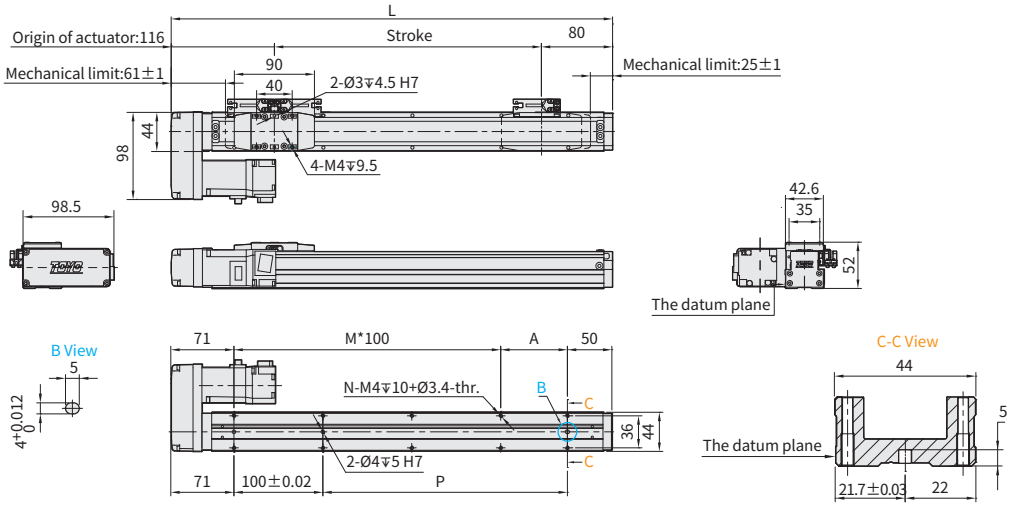
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

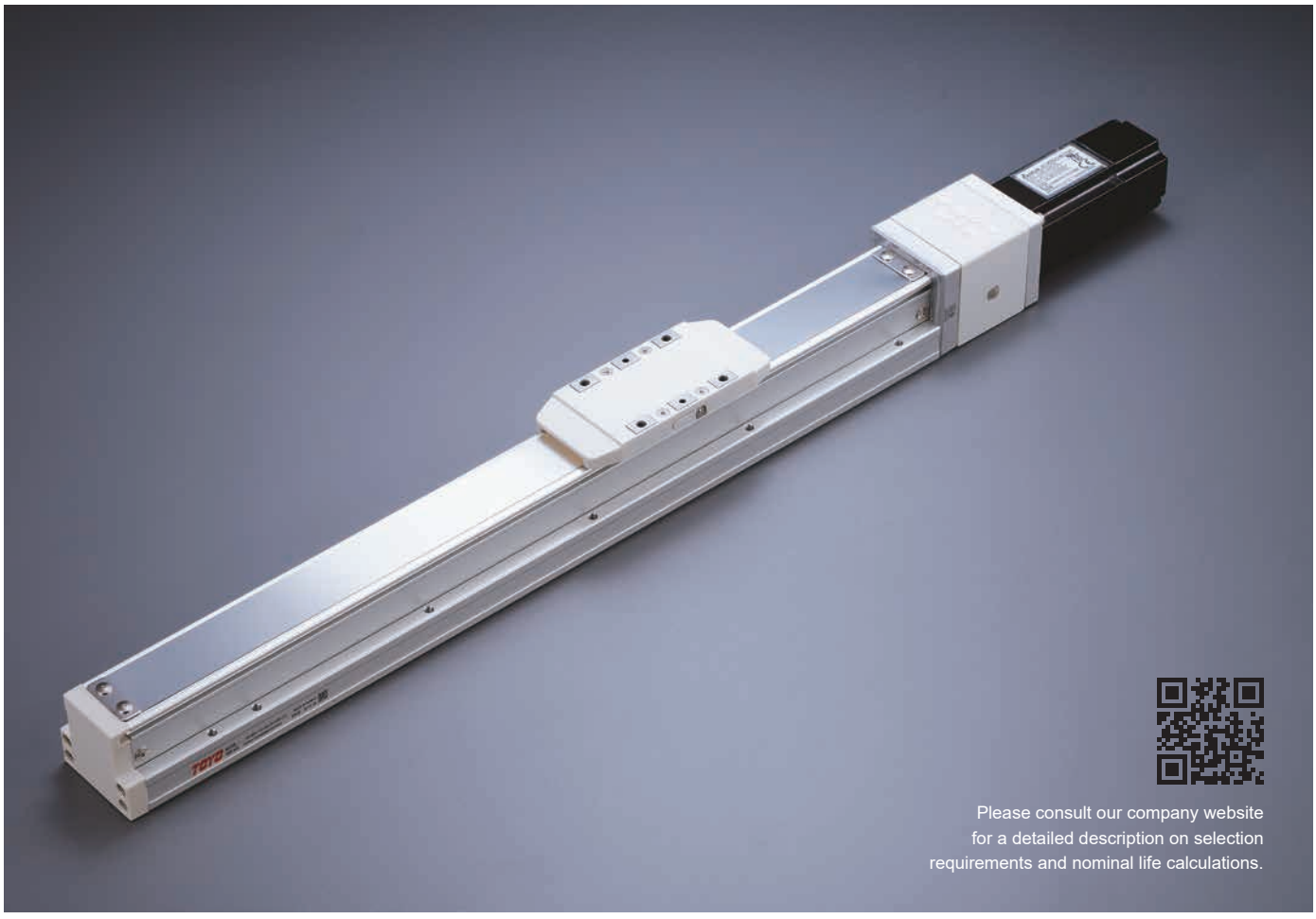


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.04	1.22	1.4	1.58	1.76	1.94	2.12	2.3	2.48	2.66	2.84	3.02	3.2	3.38	3.56	3.74	3.92	4.1	4.28	4.46
Linear Speed mm/s	Lead 2	100											90	80	70	60	50	43	40	37	33
	Lead 6	360									330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720									660	640	540	480	420	360	300	260	240	220	200

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH5

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH5 - L 5 - 100 - BC - M10B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

2	2mm
5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews
50-1050mm (50mm increments)
Ground Ballscrews
50-300mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*1
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others*3			
Without Attachment kit				
K	No Motor Flange & Coupling*4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 50mm, the sensor installation has the following restrictions:

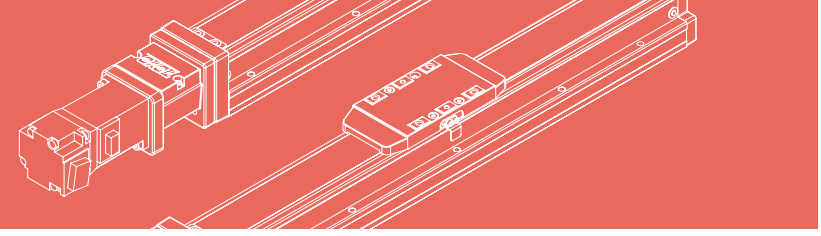
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.



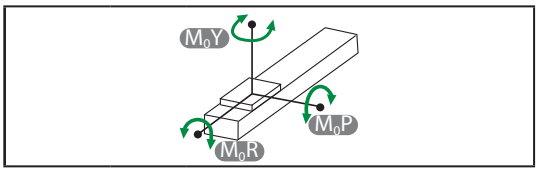
Specification

Item							
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews
		Repeatability		mm	±0.005		±0.003
		Stroke (increments)		mm	50-1050mm (50 increments)		50-300mm (50 increments)

Item								
Item	Ball screw	Outer dia. & Precision grade		mm	Ø12			
		Lead		mm	2	5	10	20
		Maximum Rotating speed※1		rpm	3000	3600	3600	3600
		Maximum linear speed※1		mm/s	100	300	600	1200
		Basic dynamic load rating Ca		N	2411	4829	4680	11284
		Basic static load rating Coa		N	5779	7836	7649	20410
		Load factor			1.2	1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	5904			
			1000 Km of travel	N	2736			
			10000 Km of travel	N	1275			
		Static horizontal		N	16904			
	Fixed bearing	Basic dynamic load rating Cr		N	1730			
		Static load rating Cor		N	3800			
	Common Spec	Start torpue		N.cm	7			
		Allowable input torque		N.m	1.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Ambient temperature※2		°C	0~+40			

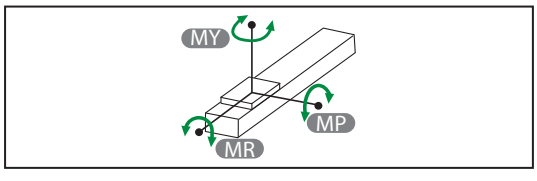
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



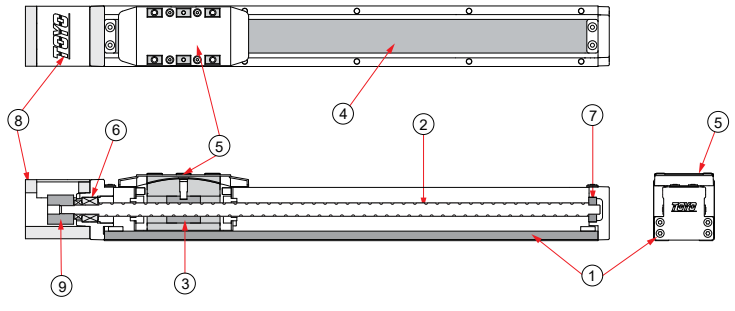
M_0Y	N.m	103
M_0P	N.m	103
M_0R	N.m	144

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	40.8	18.9	8.8
MP	N.m	40.8	18.9	8.8
MR	N.m	58.8	27.2	12.6

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH5

▶ Integrated Linear Bearing ▶ Ball Screw Drive

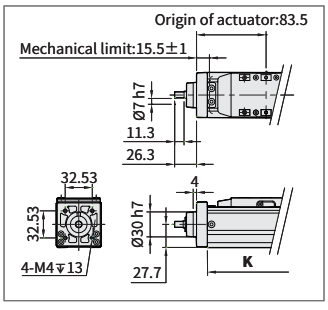
Unit : mm

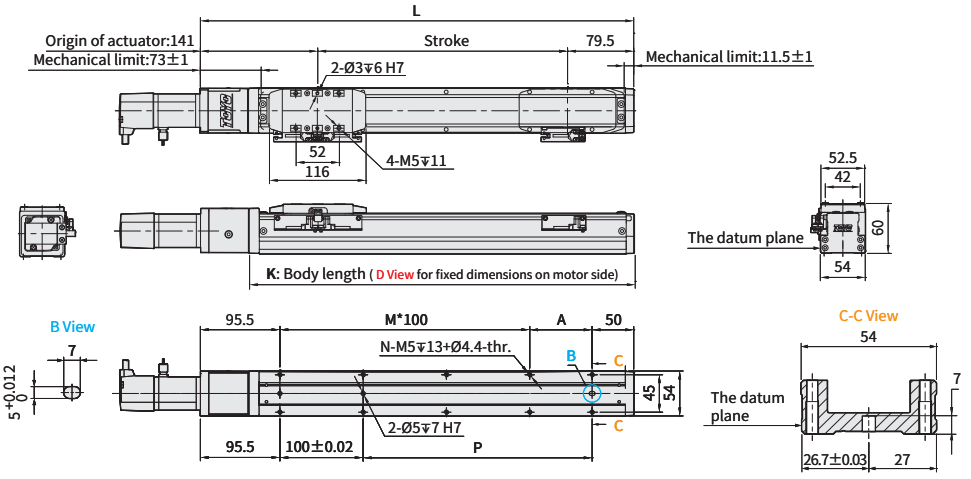
BC Motor Exposed

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

D-View
K Style - No motor mount or coupling





Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070
L		270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG※1		1.65	1.79	1.92	2.11	2.39	2.5	2.52	2.75	2.86	2.95	3.15	3.28	3.44	3.58	3.71	4.09	4.47	4.85	5.23	5.61	6
K		213	263	313	363	413	463	513	563	613	663	713	763	813	863	913	963	1013	1063	1113	1163	1213
Linear Speed mm/s	Lead 2	100												90	80	70	60	50	47	40	37	33
	Lead 5	300										292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600										583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200										1167	1000	900	800	700	600	500	467	400	367	333

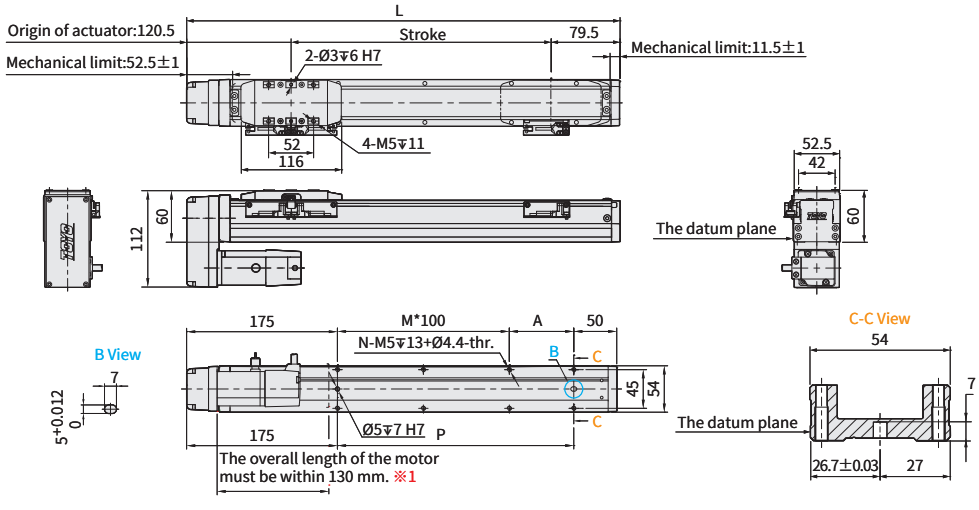
※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BM Motor Bottom Side

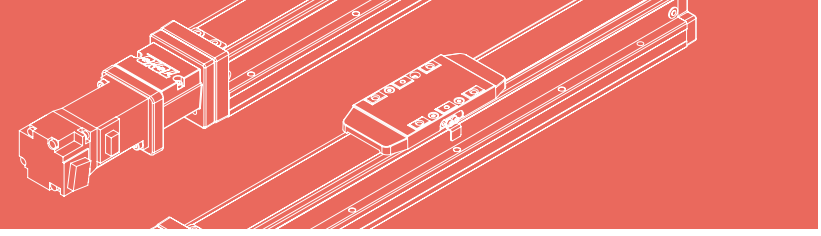
2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		1.68	1.8	2.03	2.14	2.42	2.53	2.58	2.78	2.89	2.98	3.18	3.31	3.47	3.6	3.74	4.12	4.5	4.88	5.26	5.64	6.02
Linear Speed mm/s	Lead 2	100												90	80	70	60	50	47	40	37	33
	Lead 5	300										292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600										583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200										1167	1000	900	800	700	600	500	467	400	367	333

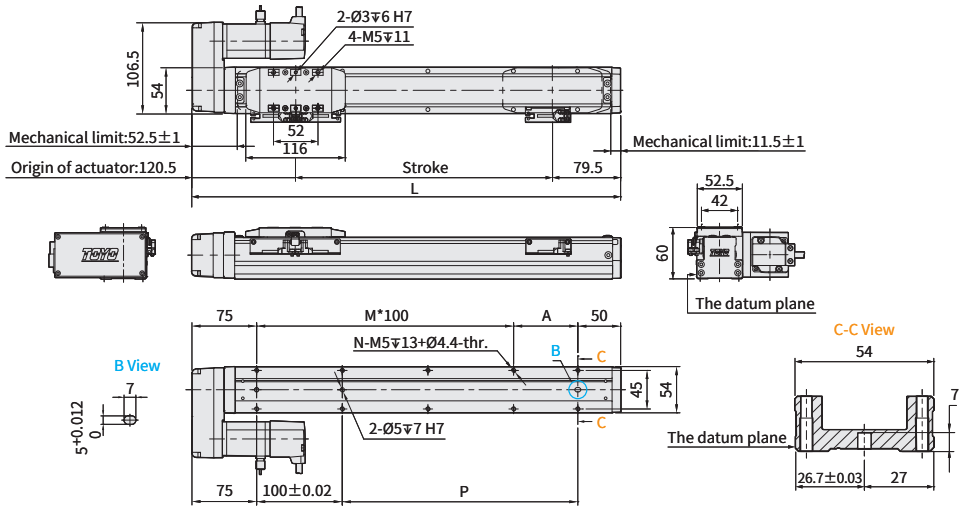
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm



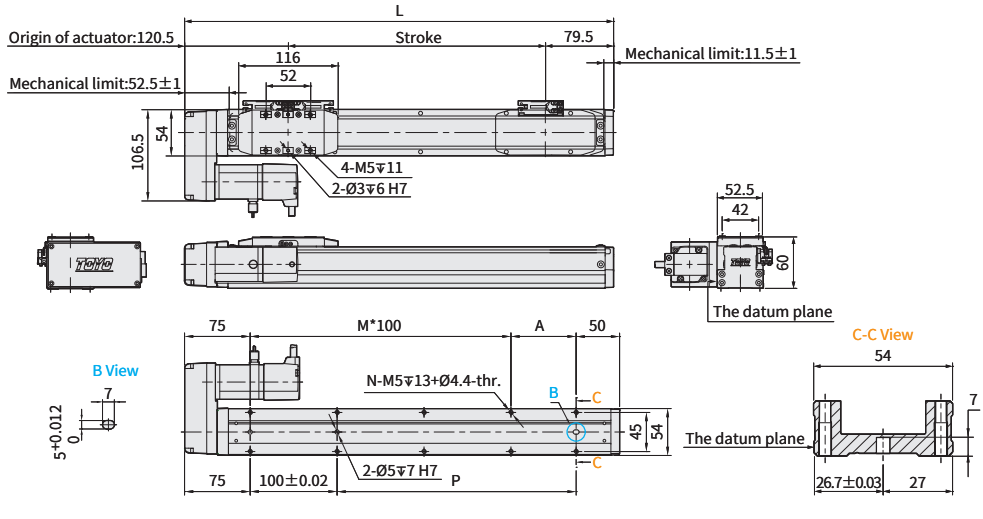
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		1.68	1.8	2.03	2.14	2.42	2.53	2.58	2.78	2.89	2.98	3.18	3.31	3.47	3.6	3.74	4.12	4.5	4.88	5.26	5.64	6.02
Linear Speed mm/s	Lead 2	100												90	80	70	60	50	47	40	37	33
	Lead 5	300										292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600										583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200										1167	1000	900	800	700	600	500	467	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm



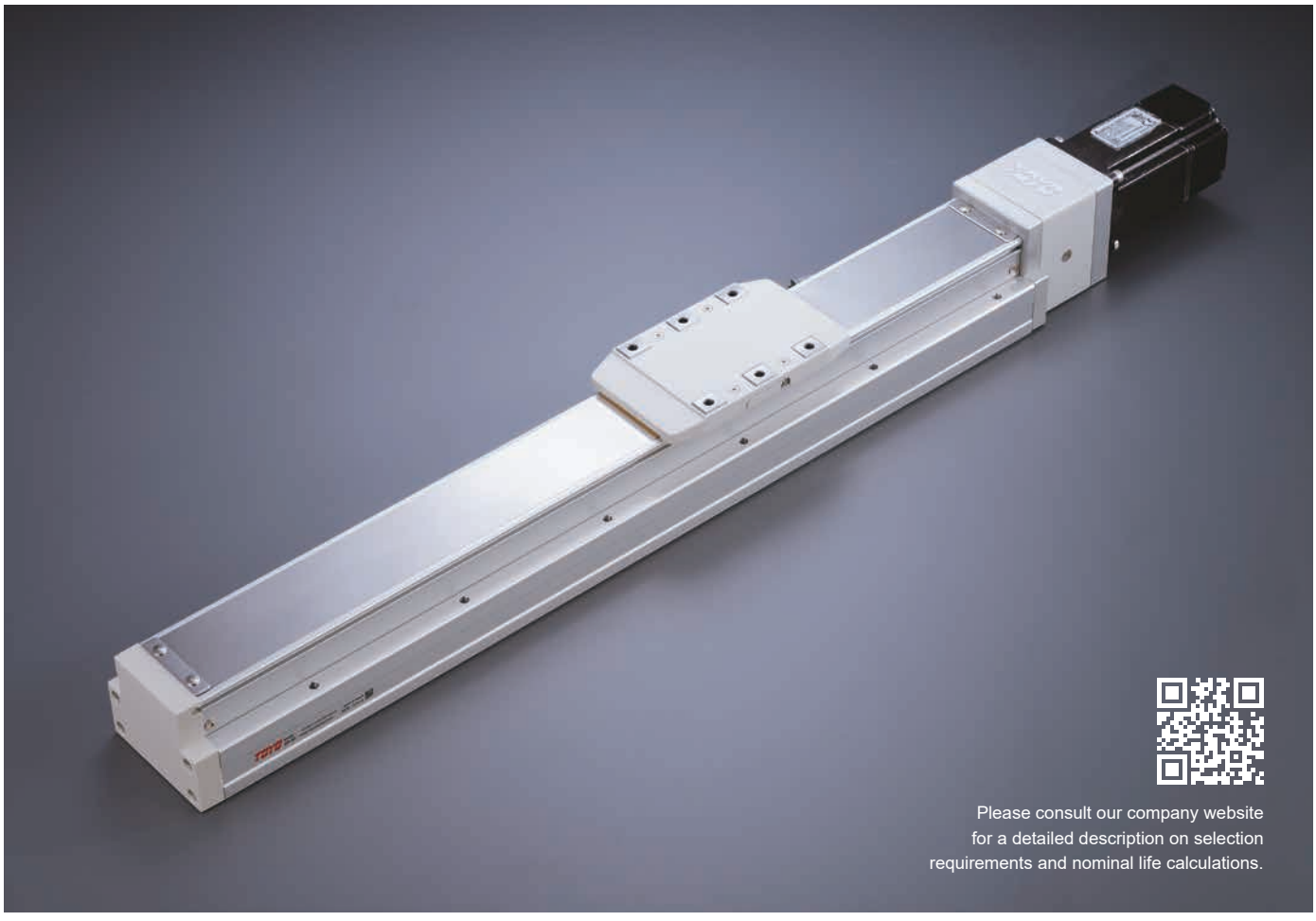
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		1.68	1.8	2.03	2.14	2.42	2.53	2.58	2.78	2.89	2.98	3.18	3.31	3.47	3.6	3.74	4.12	4.5	4.88	5.26	5.64	6.02
Linear Speed mm/s	Lead 2	100												90	80	70	60	50	47	40	37	33
	Lead 5	300										292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600										583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200										1167	1000	900	800	700	600	500	467	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH3
GTH4
GTH8S
GTH8
GTH12
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D

GTH8

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8 - L10 - 100 - BC - M20B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews	
50-1250mm (50mm increments)	
Ground Ballscrews	
50-700mm (50mm increments)	

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 50mm, the sensor installation has the following restrictions:

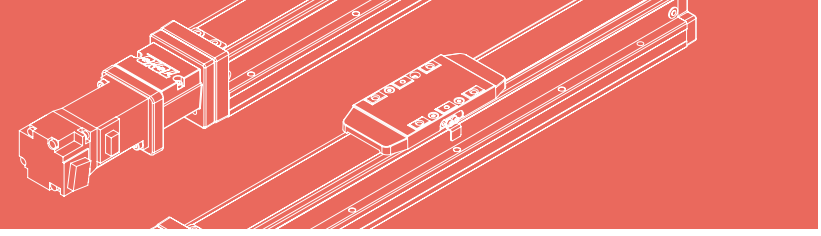
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.

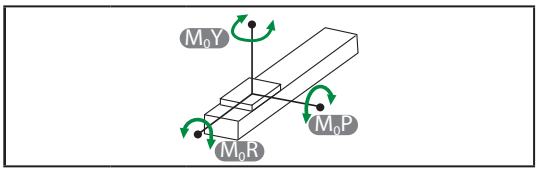


Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1250mm (50 increments)	50-700mm (50 increments)
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16	
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620		
			1000 Km of travel	N	8643		
			10000 Km of travel	N	4012		
		Static horizontal		N	34230		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

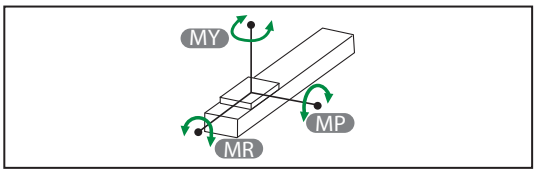
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



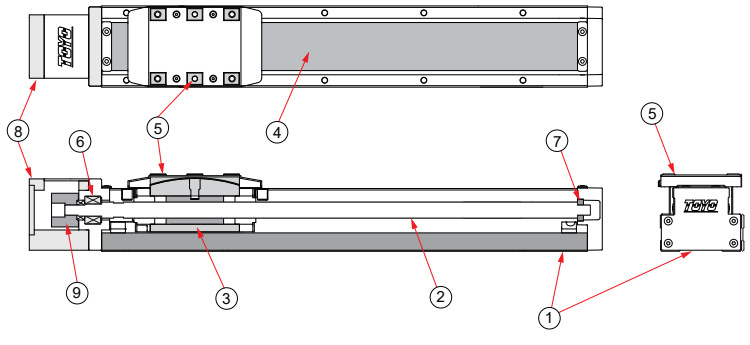
M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



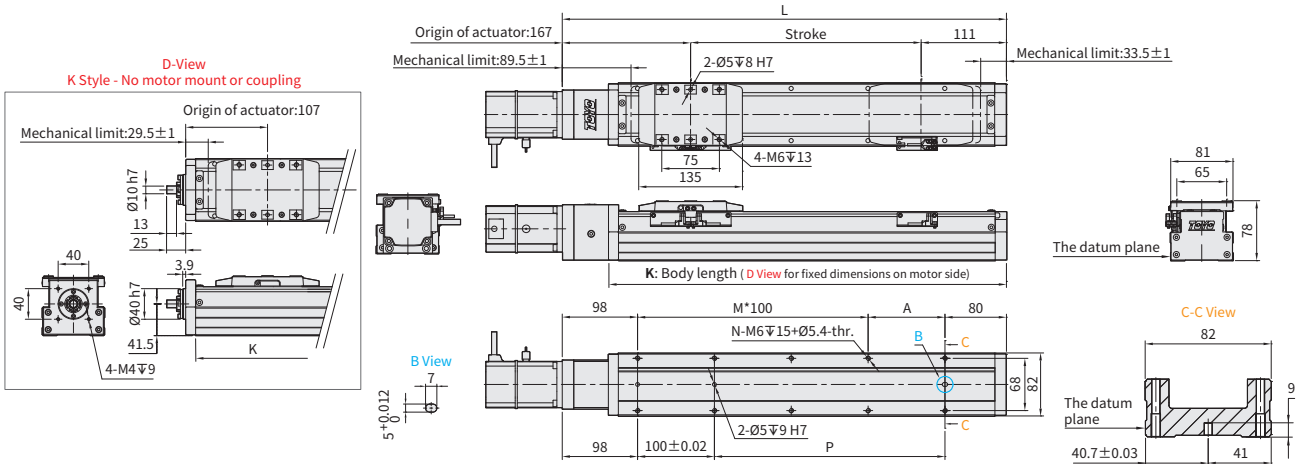
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

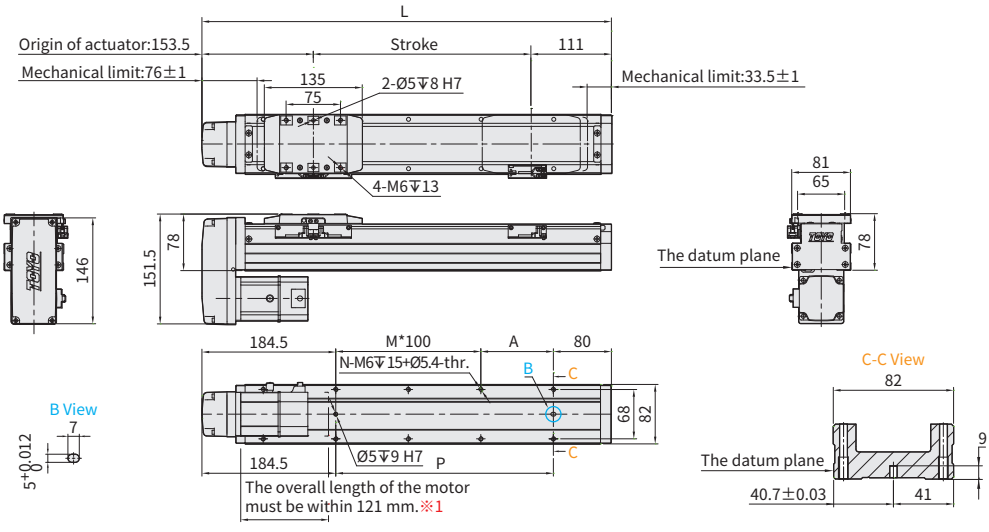


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		328	378	428	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		3.91	4.29	4.7	5	5.35	5.68	6	6.35	6.64	6.97	7.41	7.71	8.12	8.41	8.65	8.96	9.37	9.62	10.01	10.28	10.7	11.12	11.54	11.96	12.38
K		268	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

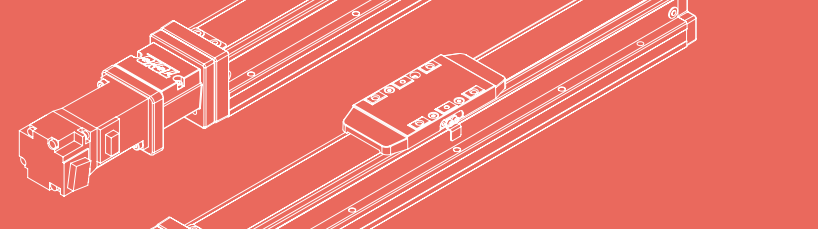
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

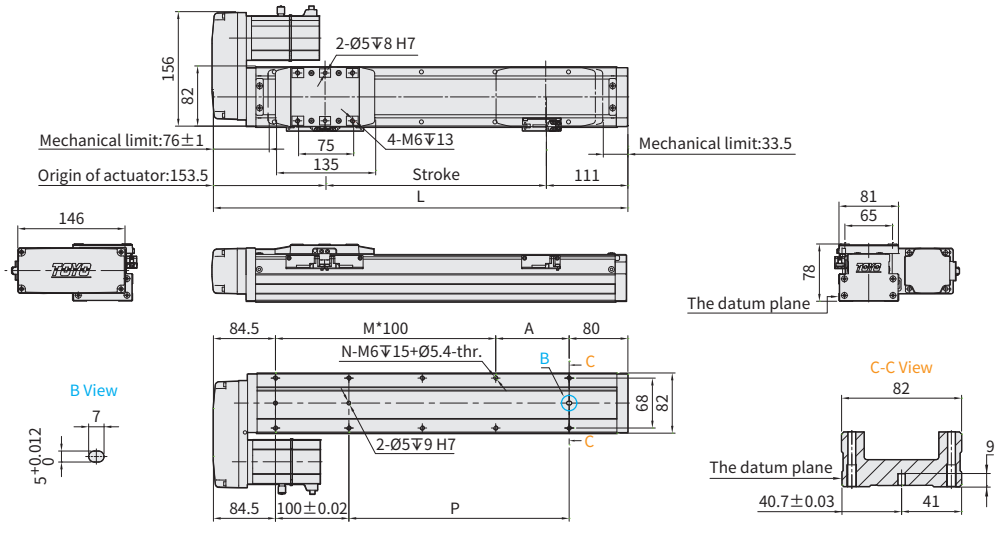
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



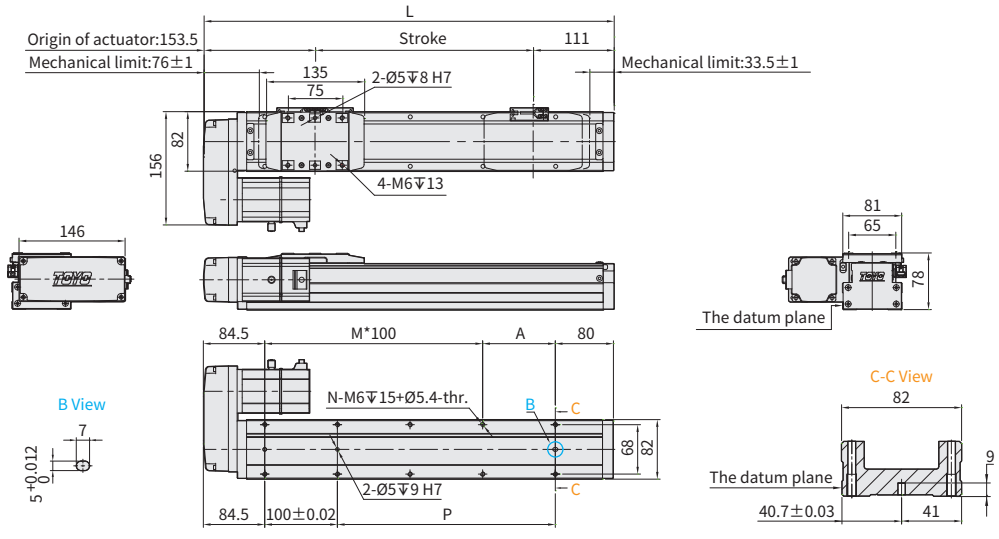
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
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	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH8

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8 - L10 - 100 - BC - M40B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews
50-1250mm (50mm increments)
Ground Ballscrews
50-700mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 50mm, the sensor installation has the following restrictions:

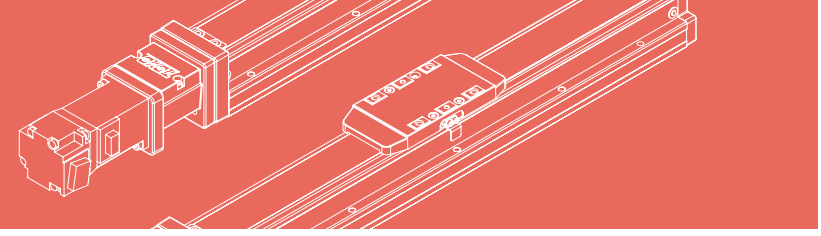
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.



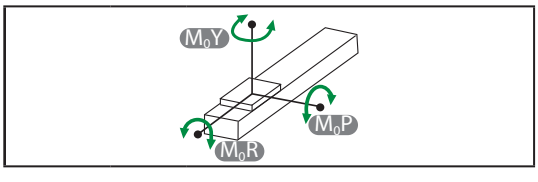
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1250mm (50 increments)	50-700mm (50 increments)

Item	Ball screw	Outer dia. & Precision grade		mm	Ø16		
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620		
			1000 Km of travel	N	8643		
			10000 Km of travel	N	4012		
		Static horizontal		N	34230		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

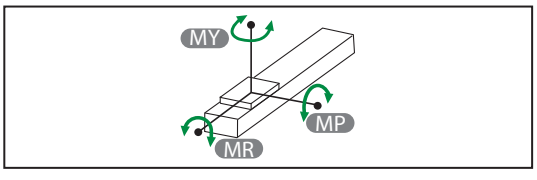
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
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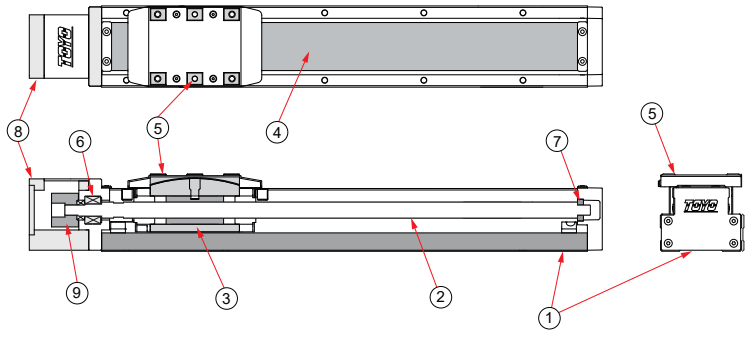
Parts list



No.	Part Description	Material
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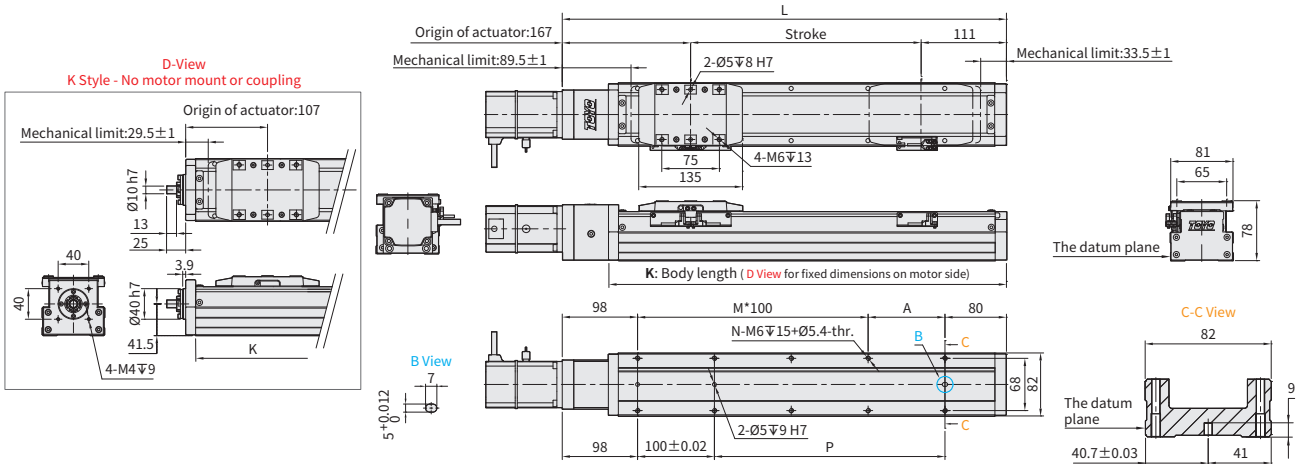
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		328	378	428	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		3.91	4.29	4.7	5	5.35	5.68	6	6.35	6.64	6.97	7.41	7.71	8.12	8.41	8.65	8.96	9.37	9.62	10.01	10.28	10.7	11.12	11.54	11.96	12.38
K		268	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
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	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

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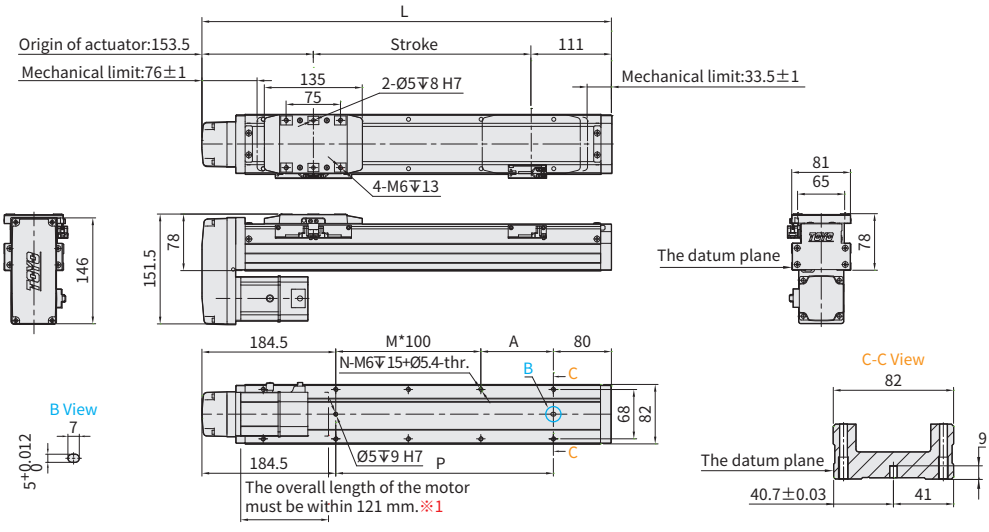
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

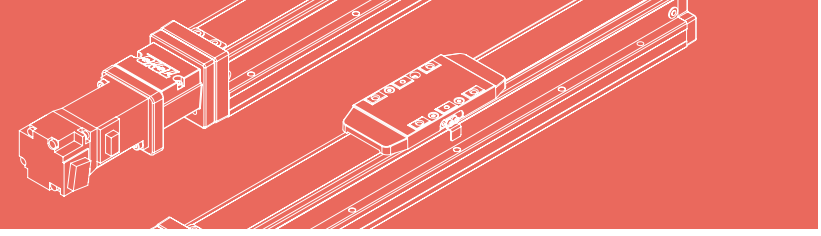
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

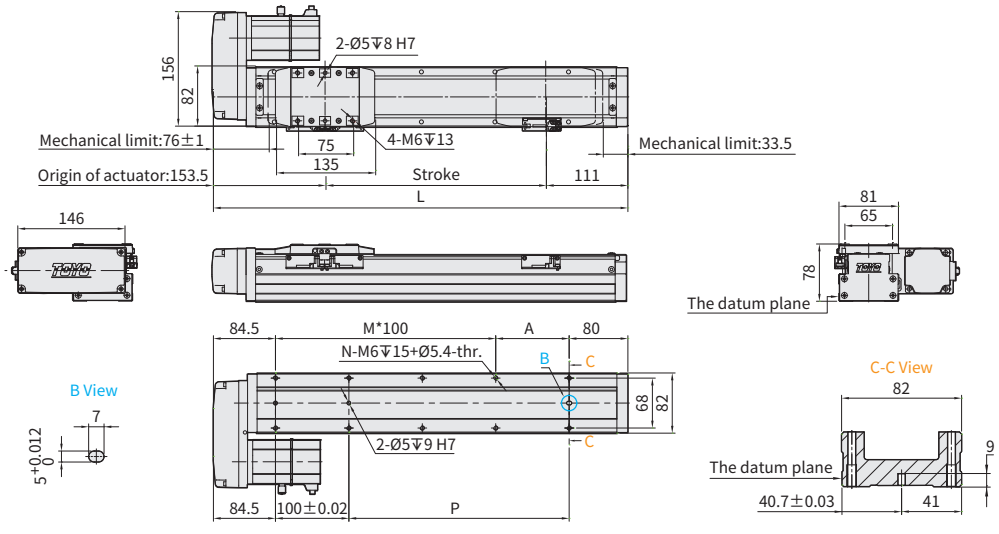
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



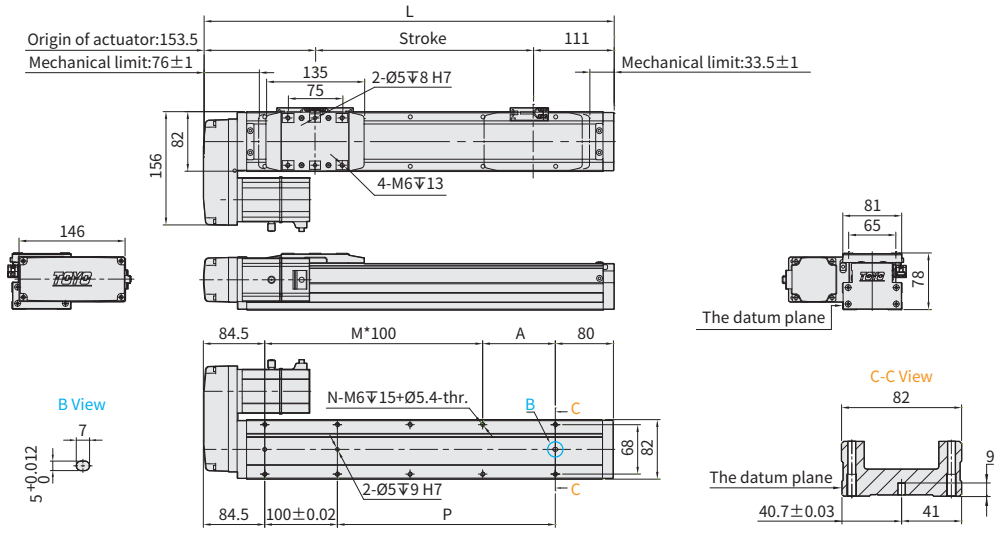
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



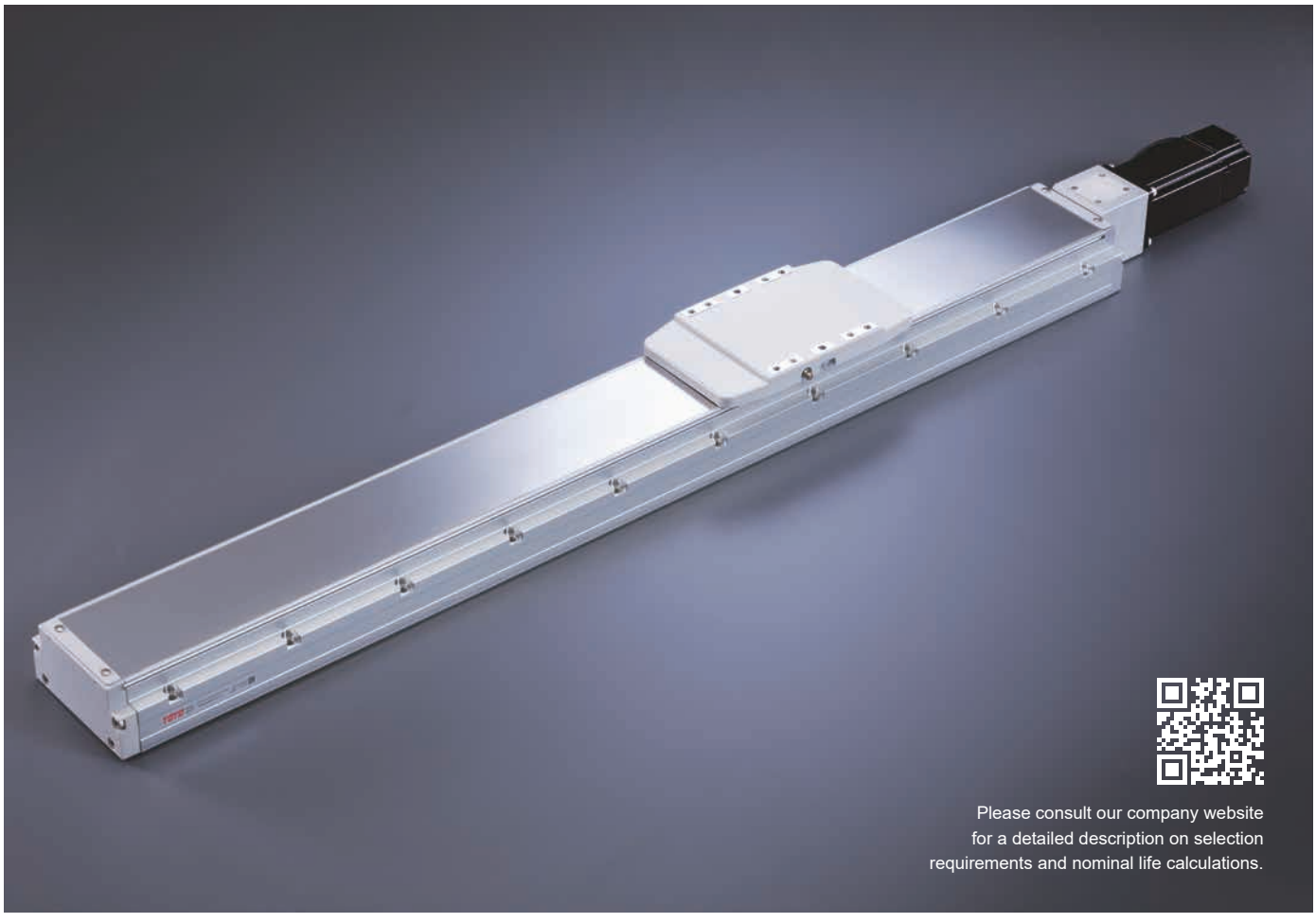
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG		3.95	4.33	4.74	5.09	5.39	5.72	6.04	6.39	6.68	7.01	7.45	7.75	8.16	8.45	8.69	9	9.41	9.66	10.08	10.32	10.74	11.16	11.58	12	12.42
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600												583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH12

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH12 - L10 - 100 - BC - M40B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm
32	32mm

Stroke

Rolled Ballscrews
50-1250mm (50mm increments)
Ground Ballscrews
50-700mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
85M1270	85□ Shaft Ø12.7			
85M1400	85□ Shaft Ø14			
85M1270D	85□ Shaft Ø12.7 with a longer coupling			
85M1588D	85□ Shaft Ø15.88 with a longer coupling			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Special Order No.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

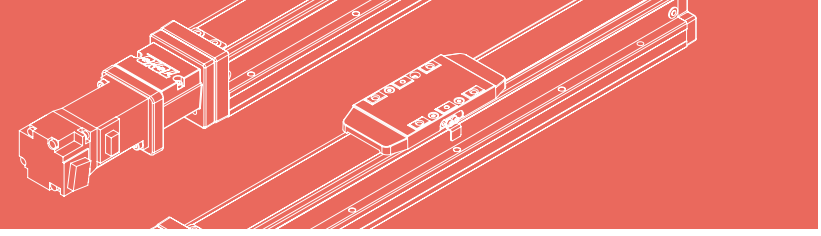
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor



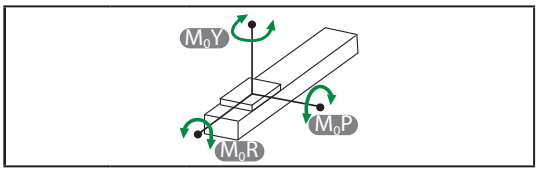
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews
		Repeatability		mm	±0.005		±0.003
		Stroke (increments)		mm	50-1250mm (50 increments)		50-700mm (50 increments)

Item	Ball screw	Outer dia. & Precision grade		mm	Ø16			
		Lead		mm	5	10	20	32
		Maximum Rotating speed※1		rpm	3600	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200	1920
		Basic dynamic load rating Ca		N	11570	6300	4152	7326
		Basic static load rating Coa		N	23030	11596	7439	14157
		Load parameters			1.2	1.35	1.35	1.75
	Linear Guide	Dynamic horizontal	100 Km of travel	N	51128			
			1000 Km of travel	N	23731			
			10000 Km of travel	N	11015			
		Static horizontal		N	84518			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Start torpue		N.cm	10			
		Allowable input torque		N.m	3.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Ambient temperature※2		°C	0~+40			

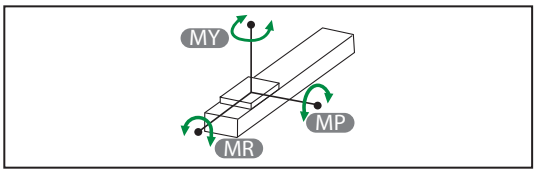
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



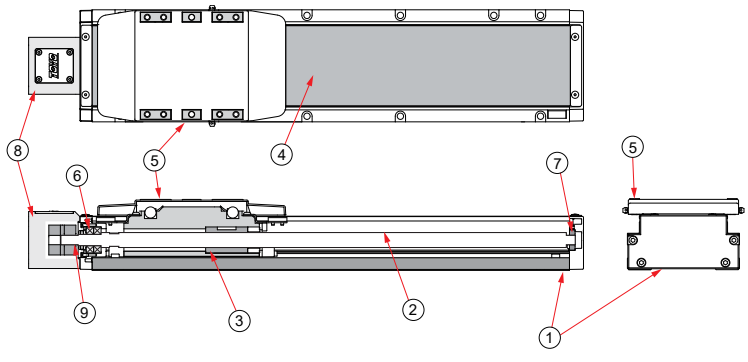
M_0Y	N.m	606
M_0P	N.m	606
M_0R	N.m	1168

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	561	260.4	120.9
MP	N.m	561	260.4	120.9
MR	N.m	958.7	445	206.5

Parts list



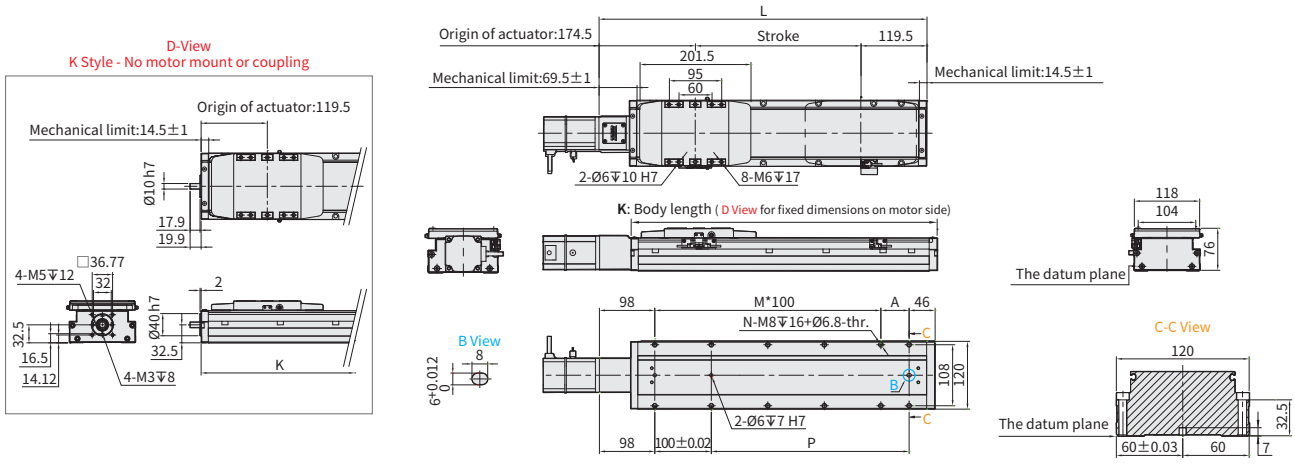
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	AL6463
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH12

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

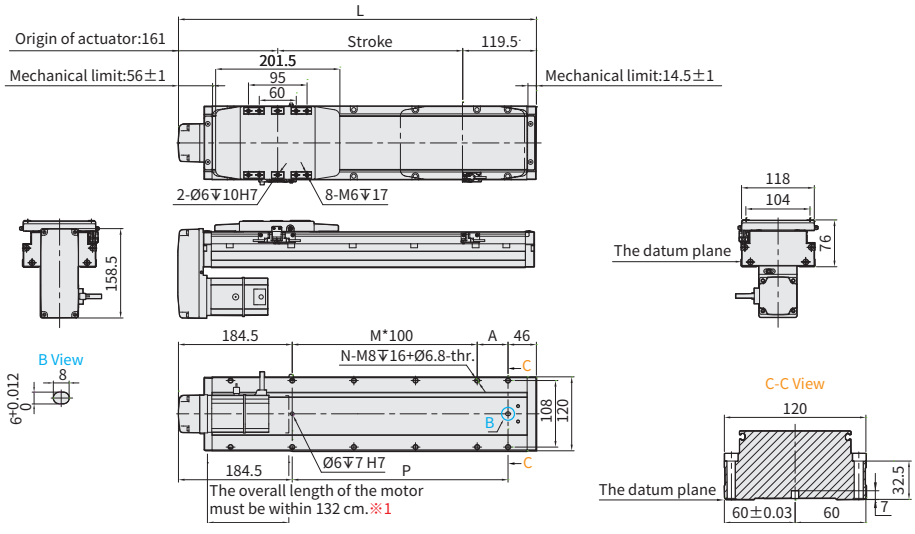


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L		344	394	444	494	544	594	644	694	744	794	844	894	944	994	1044	1094	1144	1194	1244	1294	1344	1394	1444	1494	1544
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG※1		5.05	5.4	5.75	6.1	6.45	6.8	7.15	7.5	7.85	8.2	8.55	8.9	9.25	9.6	9.95	10.3	10.65	11	11.35	11.7	12.05	12.4	12.75	13.1	13.45
K		289	339	389	439	489	539	589	639	689	739	789	839	889	939	989	1039	1089	1139	1189	1239	1289	1339	1389	1439	1489
Linear Speed mm/s	Lead 5	300														275	250	225	200	175	167	158	142	133	125	117
	Lead 10	600														550	500	450	400	350	333	317	283	267	250	233
	Lead 20	1200														1100	1000	900	800	700	667	633	567	533	500	467
	Lead 32	1920														1760	1600	1440	1280	1120	1067	1013	907	853	800	747

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L		330.5	380.5	430.5	480.5	530.5	580.5	630.5	680.5	730.5	780.5	830.5	880.5	930.5	980.5	1030.5	1080.5	1130.5	1180.5	1230.5	1280.5	1330.5	1380.5	1430.5	1480.5	1530.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
N		4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28
P		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		5.21	5.56	5.91	6.26	6.61	6.96	7.31	7.66	8.01	8.36	8.71	9.06	9.41	9.76	10.11	10.46	10.81	11.16	11.51	11.86	12.21	12.56	12.91	13.26	13.61
Linear Speed mm/s	Lead 5	300														275	250	225	200	175	167	158	142	133	125	117
	Lead 10	600														550	500	450	400	350	333	317	283	267	250	233
	Lead 20	1200														1100	1000	900	800	700	667	633	567	533	500	467
	Lead 32	1920														1760	1600	1440	1280	1120	1067	1013	907	853	800	747

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
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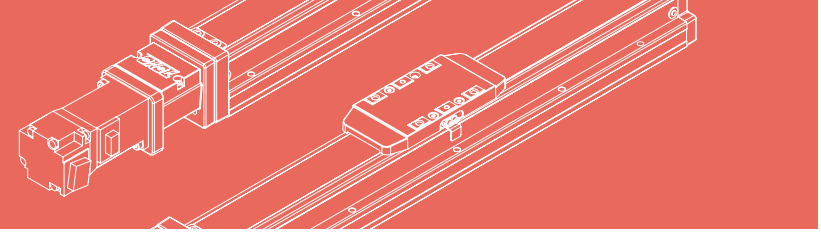
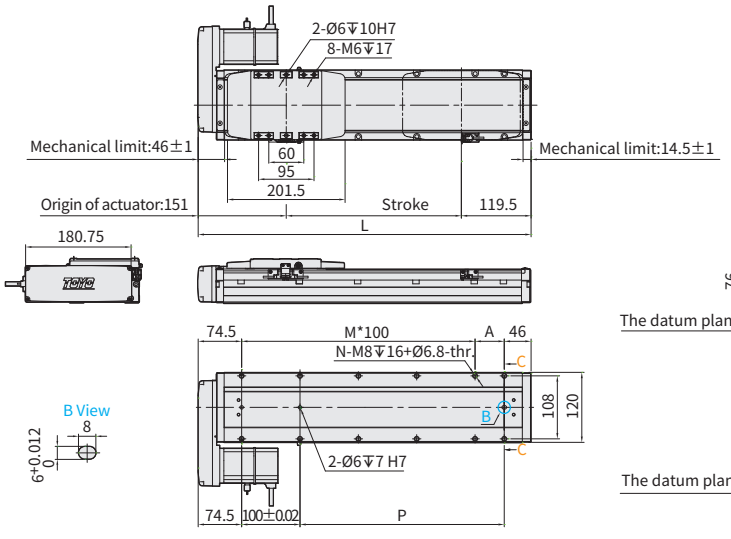


Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



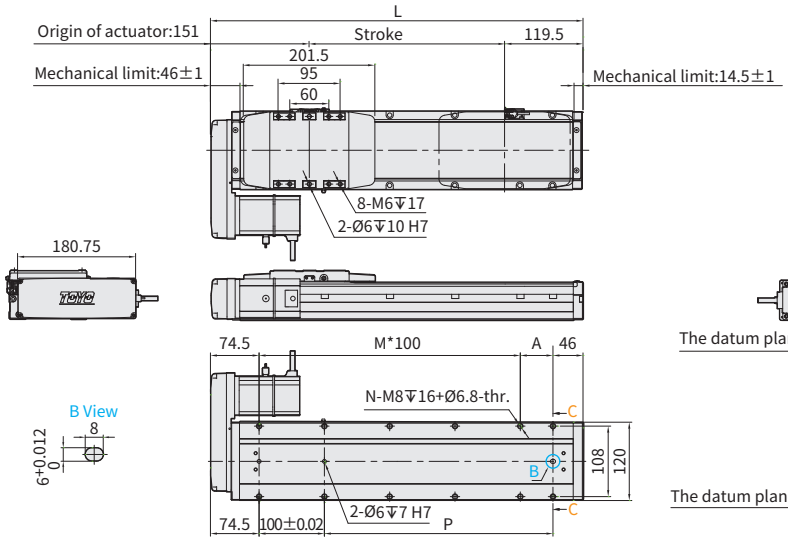
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L		320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		5.25	5.6	5.95	6.3	6.65	7	7.35	7.7	8.05	8.4	8.75	9.1	9.45	9.8	10.15	10.85	11.2	11.55	11.9	12.25	12.6	12.56	12.91	13.26	13.61
Linear Speed mm/s	Lead 5	300														275	250	225	200	175	167	158	142	133	125	117
	Lead 10	600														550	500	450	400	350	333	317	283	267	250	233
	Lead 20	1200														1100	1000	900	800	700	667	633	567	533	500	467
	Lead 32	1920														1760	1600	1440	1280	1120	1067	1013	907	853	800	747

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

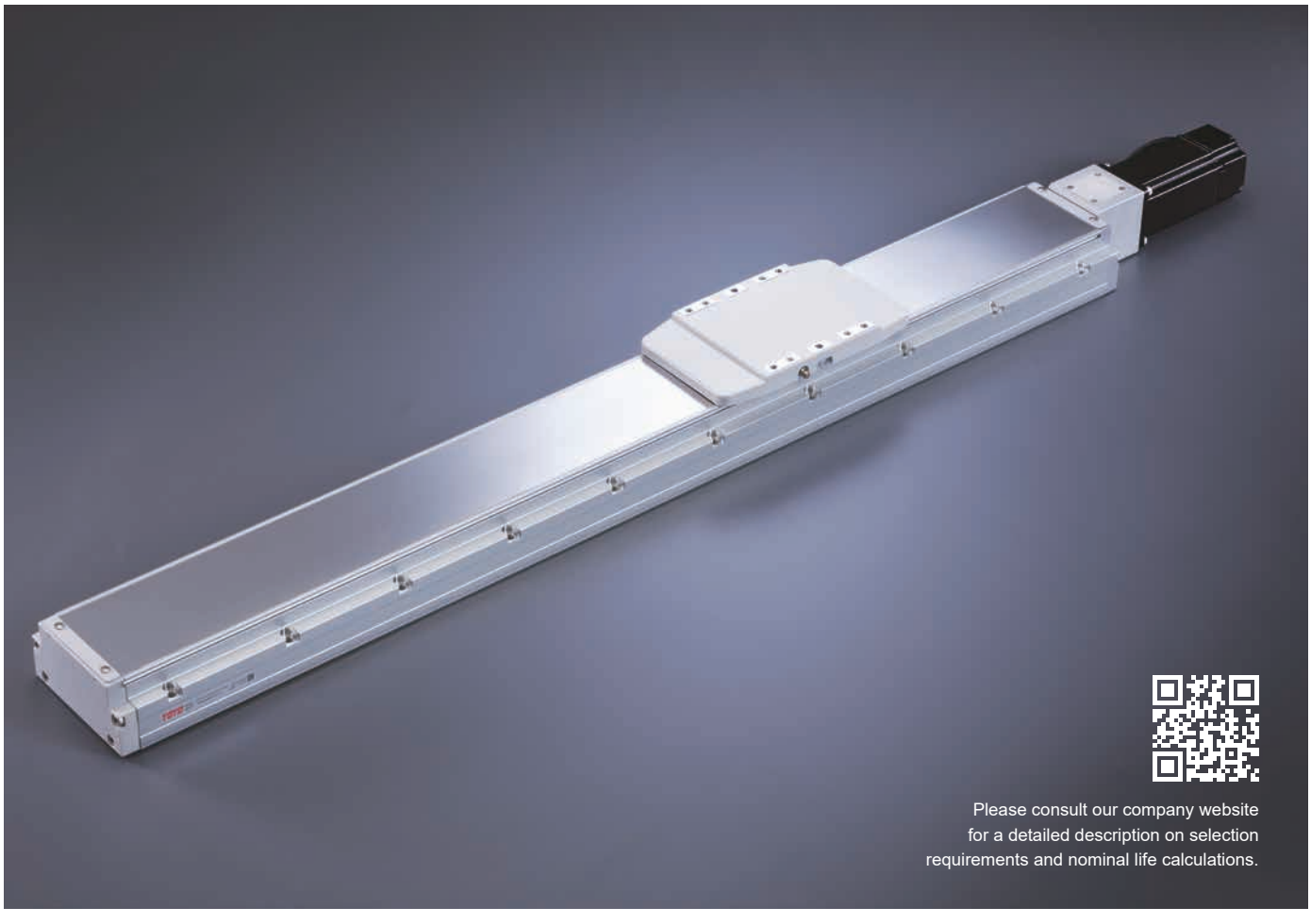


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
Limit Stroke (±1)		58.5	108.5	158.5	208.5	258.5	308.5	358.5	408.5	458.5	508.5	558.5	608.5	658.5	708.5	758.5	808.5	858.5	908.5	958.5	1008.5	1058.5	1108.5	1158.5	1208.5	1258.5
L		320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		5.25	5.6	5.95	6.3	6.65	7	7.35	7.7	8.05	8.4	8.75	9.1	9.45	9.8	10.15	10.85	11.2	11.55	11.9	12.25	12.6	12.56	12.91	13.26	13.61
Linear Speed mm/s	Lead 5	300														275	250	225	200	175	167	158	142	133	125	117
	Lead 10	600														550	500	450	400	350	333	317	283	267	250	233
	Lead 20	1200														1100	1000	900	800	700	667	633	567	533	500	467
	Lead 32	1920														1760	1600	1440	1280	1120	1067	1013	907	853	800	747

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH12M ▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH12M - L10 - 100 - BC - M40B - C4 - 0001

Model

Ball Screw Lead

5	5mm
10	10mm
20	20mm
32	32mm

Stroke

750-2200mm
50mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
85M1270	85□ Shaft Ø12.7			
85M1400	85□ Shaft Ø14			
85M1270D	85□ Shaft Ø12.7 with a longer coupling			
85M1588D	85□ Shaft Ø15.88 with a longer coupling			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

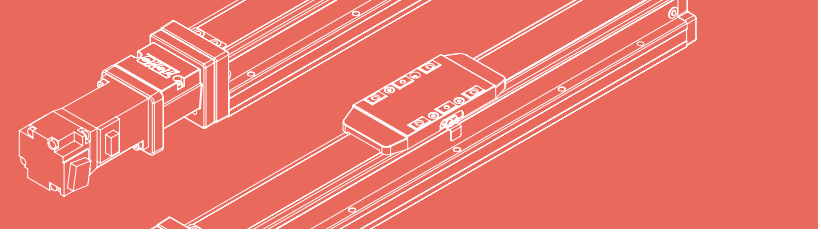
Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.

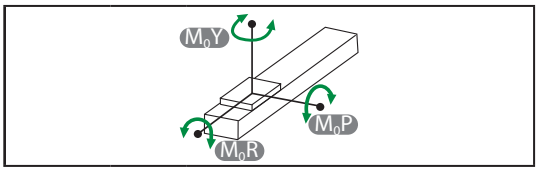


Specification

Item								
	Ball screw	Outer dia. & Precision grade		mm	Ø16&C7 Rolled Ballscrews			
		Lead		mm	5	10	20	32
		Maximum Rotating speed※1		rpm	3600	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200	1920
		Basic dynamic load rating Ca		N	11570	6300	4152	7326
		Basic static load rating Coa		N	23030	11596	7439	14157
		Load parameters			1.2	1.35	1.35	1.75
	Linear Guide	Dynamic horizontal	100 Km of travel	N	51128			
			1000 Km of travel	N	23731			
			10000 Km of travel	N	11015			
		Static horizontal		N	84518			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Repeatability		mm	±0.005			
		Start torpue		N.cm	10			
		Allowable input torque		N.m	3.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Stroke (increments)		mm	750-2200 (50 increments)			
		Ambient temperature※2		°C	0~+40			

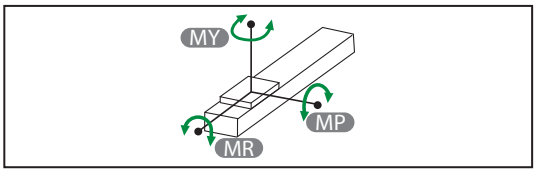
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



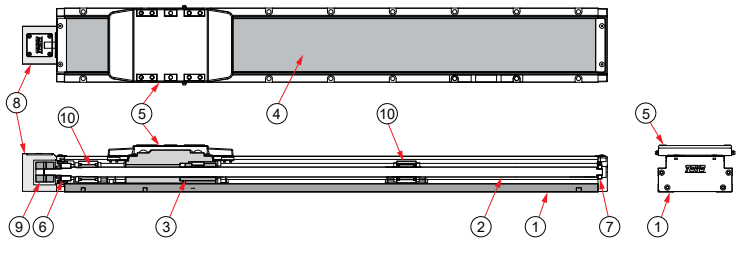
M_0Y	N.m	606
M_0P	N.m	606
M_0R	N.m	1168

Dynamic Loading Moment



Travel	km	**100**	**1000**	**10000**
MY	N.m	561	260.4	120.9
MP	N.m	561	260.4	120.9
MR	N.m	958.7	445	206.5

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	AL6463
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061
10	Support slides	AL6463

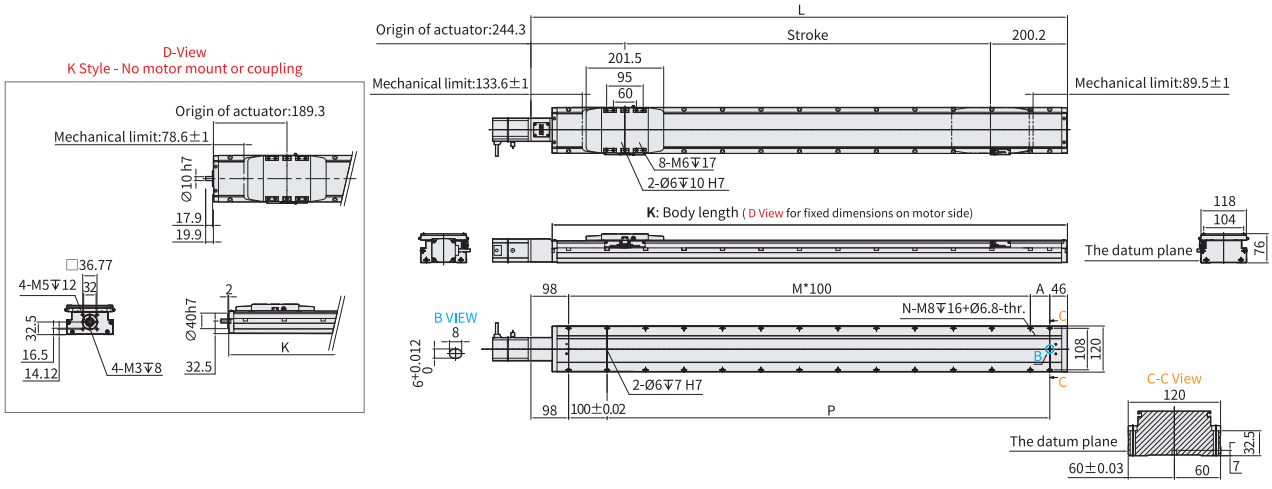
GTH12M ▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed

2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Limit Stroke (±1)		770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920	1970	2020	2070	2120	2170	2220
L		1194.5	1244.5	1294.5	1344.5	1394.5	1444.5	1494.5	1544.5	1594.5	1644.5	1694.5	1744.5	1794.5	1844.5	1894.5	1944.5	1994.5	2044.5	2094.5	2144.5	2194.5	2244.5	2294.5	2344.5	2394.5	2444.5	2494.5	2544.5	2594.5	2644.5
A		50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5
M		10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24
N		24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52
P		950.5	1000.5	1050.5	1100.5	1150.5	1200.5	1250.5	1300.5	1350.5	1400.5	1450.5	1500.5	1550.5	1600.5	1650.5	1700.5	1750.5	1800.5	1850.5	1900.5	1950.5	2000.5	2050.5	2100.5	2150.5	2200.5	2250.5	2300.5	2350.5	2400.5
KG※1		12.32	12.74	13.16	13.58	14	14.42	14.84	15.26	15.68	16.1	16.52	16.94	17.36	17.78	18.2	18.62	19.04	19.46	19.88	20.3	20.72	21.14	21.56	21.98	22.4	22.82	23.24	23.66	24.08	24.5
K		1139	1189	1239	1289	1339	1389	1439	1489	1539	1589	1639	1689	1739	1789	1839	1889	1939	1989	2039	2089	2139	2189	2239	2289	2339	2389	2439	2489	2539	2589
Linear Speed mm/s	Lead 5	300															287.5	255	230	205	190	175	155	150	130	125	115	105	100	95	85
	Lead 10	600															575	515	465	415	380	350	315	300	265	250	230	215	200	190	175
	Lead 20	1200															1150	1030	930	830	765	700	630	600	530	500	465	430	400	380	350
	Lead 32	1920															1785	1600	1440	1330	1170	1120	1010	900	850	800	745	690	640	585	

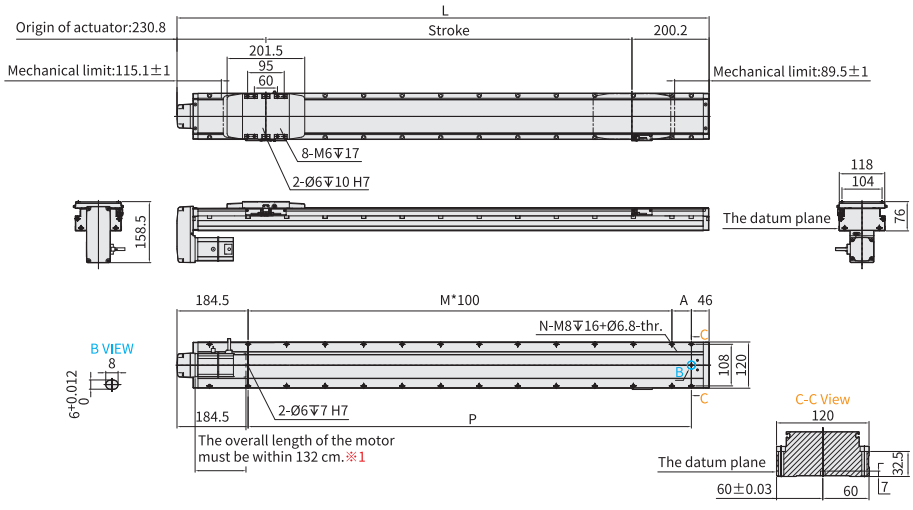
※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

Unit : mm

BM Motor Bottom Side

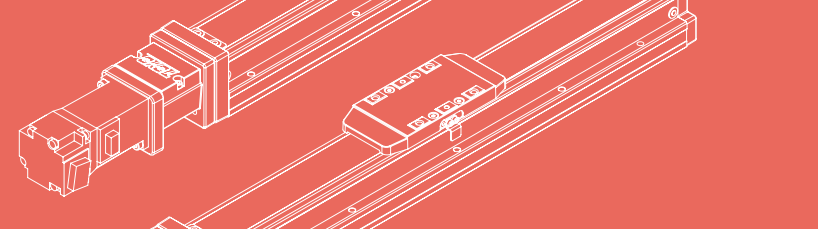
2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Limit Stroke (±1)		770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920	1970	2020	2070	2120	2170	2220
L		1181	1231	1281	1331	1381	1431	1481	1531	1581	1631	1681	1731	1781	1831	1881	1931	1981	2031	2081	2131	2181	2231	2281	2331	2381	2431	2481	2531	2581	2631
A		50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5
M		9	9	10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23
N		22	22	24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50
P		950.5	1000.5	1050.5	1100.5	1150.5	1200.5	1250.5	1300.5	1350.5	1400.5	1450.5	1500.5	1550.5	1600.5	1650.5	1700.5	1750.5	1800.5	1850.5	1900.5	1950.5	2000.5	2050.5	2100.5	2150.5	2200.5	2250.5	2300.5	2350.5	2400.5
KG※1		12.52	12.78	13.2	13.62	14.04	14.46	14.88	15.3	15.72	16.14	16.56	16.98	17.4	17.82	18.24	18.66	19.08	19.5	19.92	20.34	20.76	21.18	21.6	22.02	22.44	22.86	23.28	23.7	24.12	24.52
Linear Speed mm/s	Lead 5	300															287.5	255	230	205	190	175	155	150	130	125	115	105	100	95	85
	Lead 10	600															575	515	465	415	380	350	315	300	265	250	230	215	200	190	175
	Lead 20	1200															1150	1030	930	830	765	700	630	600	530	500	465	430	400	380	350
	Lead 32	1920															1785	1600	1440	1330	1170	1120	1010	900	850	800	745	690	640	585	

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

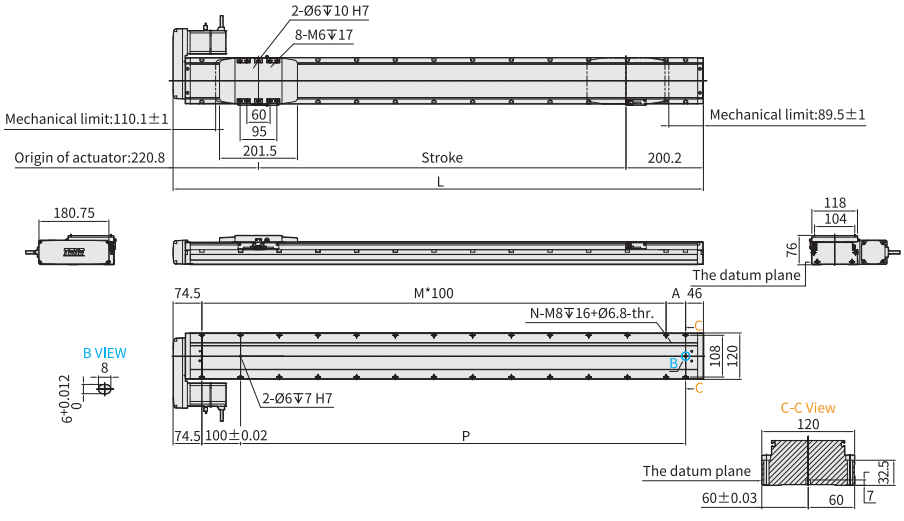


BR Motor Left Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



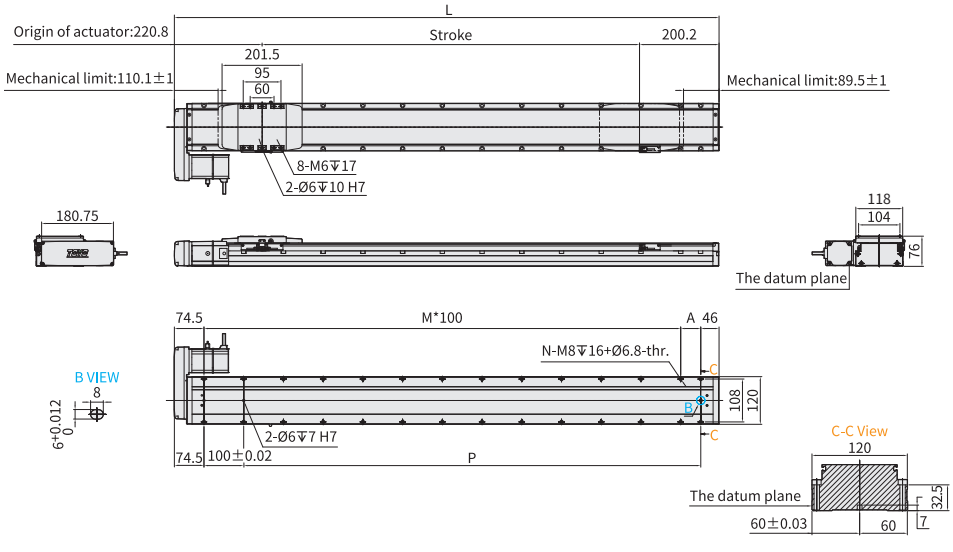
Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Limit Stroke (±1)		770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920	1970	2020	2070	2120	2170	2220
L		1171	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921	1971	2021	2071	2121	2171	2221	2271	2321	2371	2421	2471	2521	2571	2621
A		50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5
M		10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24
N		24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52
P		950.5	1000.5	1050.5	1100.5	1150.5	1200.5	1250.5	1300.5	1350.5	1400.5	1450.5	1500.5	1550.5	1600.5	1650.5	1700.5	1750.5	1800.5	1850.5	1900.5	1950.5	2000.5	2050.5	2100.5	2150.5	2200.5	2250.5	2300.5	2350.5	2400.5
KG※1		12.52	12.94	13.36	13.78	14.2	14.62	15.04	15.26	15.88	16.21	16.72	17.14	17.56	17.98	18.4	18.82	19.24	19.66	20.08	20.5	20.92	21.34	21.76	22.18	22.6	23.02	23.44	23.86	24.28	24.7
Linear Speed mm/s	Lead 5	300															287.5	255	230	205	190	175	155	150	130	125	115	105	100	95	85
	Lead 10	600															575	515	465	415	380	350	315	300	265	250	230	215	200	190	175
	Lead 20	1200															1150	1030	930	830	765	700	630	600	530	500	465	430	400	380	350
	Lead 32	1920															1785	1600	1440	1330	1170	1120	1010	900	850	800	745	690	640	585	

BL Motor Right Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

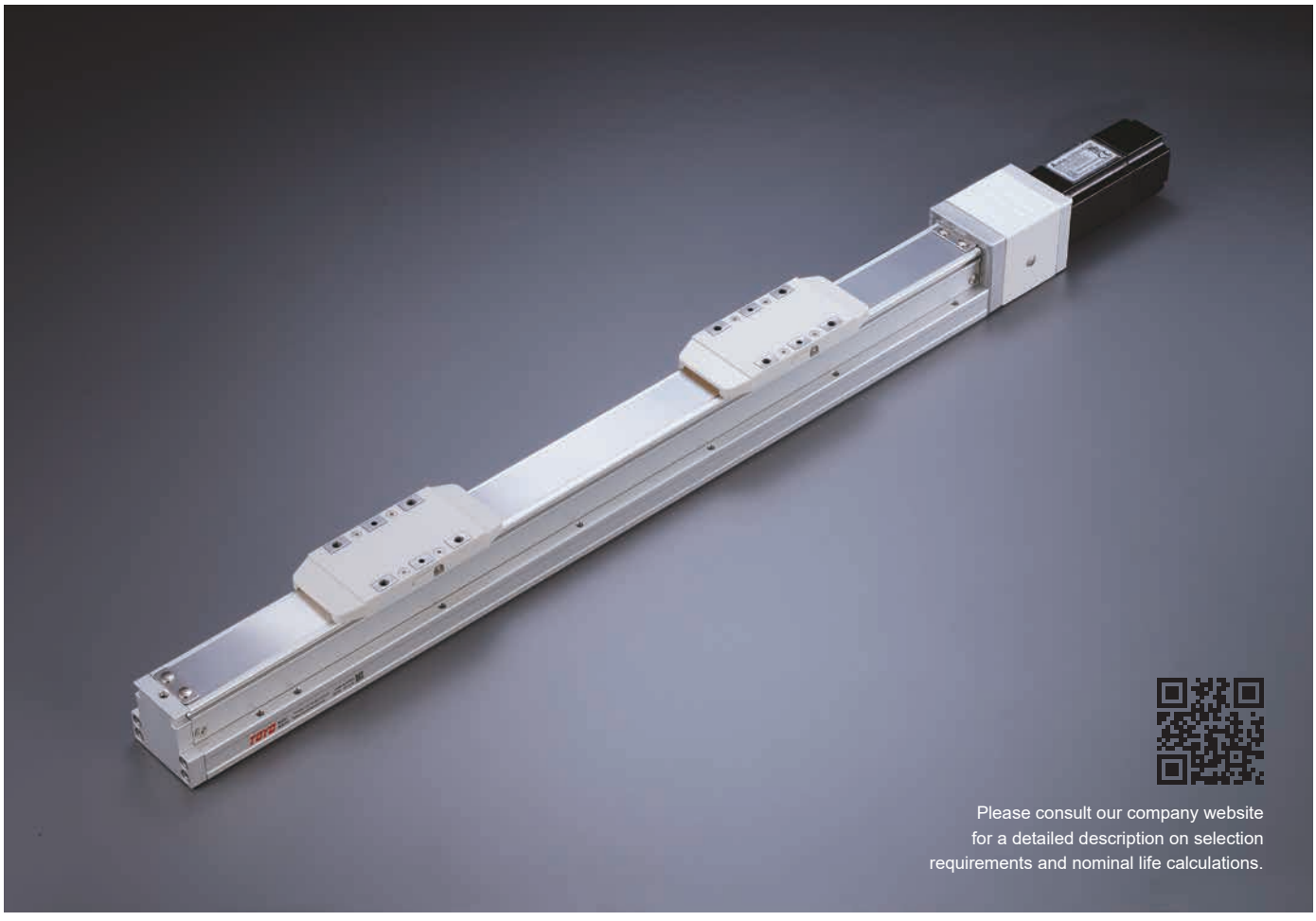
Unit : mm



Stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200
Limit Stroke (±1)		770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920	1970	2020	2070	2120	2170	2220
L		1171	1221	1271	1321	1371	1421	1471	1521	1571	1621	1671	1721	1771	1821	1871	1921	1971	2021	2071	2121	2171	2221	2271	2321	2371	2421	2471	2521	2571	2621
A		50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5	50.5	100.5
M		10	10	11	11	12	12	13	13	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22	22	23	23	24	24
N		24	24	26	26	28	28	30	30	32	32	34	34	36	36	38	38	40	40	42	42	44	44	46	46	48	48	50	50	52	52
P		950.5	1000.5	1050.5	1100.5	1150.5	1200.5	1250.5	1300.5	1350.5	1400.5	1450.5	1500.5	1550.5	1600.5	1650.5	1700.5	1750.5	1800.5	1850.5	1900.5	1950.5	2000.5	2050.5	2100.5	2150.5	2200.5	2250.5	2300.5	2350.5	2400.5
KG※1		12.52	12.94	13.36	13.78	14.2	14.62	15.04	15.26	15.88	16.21	16.72	17.14	17.56	17.98	18.4	18.82	19.24	19.66	20.08	20.5	20.92	21.34	21.76	22.18	22.6	23.02	23.44	23.86	24.28	24.7
Linear Speed mm/s	Lead 5	300															287.5	255	230	205	190	175	155	150	130	125	115	105	100	95	85
	Lead 10	600															575	515	465	415	380	350	315	300	265	250	230	215	200	190	175
	Lead 20	1200															1150	1030	930	830	765	700	630	600	530	500	465	430	400	380	350
	Lead 32	1920															1785	1600	1440	1330	1170	1120	1010	900	850	800	745	690	640	585	

GTH5S

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH5S - L 2 - 100 - BC - M10B - C4 - 0001

Model

Special Order No.

Ball Screw Lead

2	2mm

*Dual carriage synchronous movement in reverse direction can only fit at lead of 2mm.

Stroke

25-450mm
25mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5 *2			
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling*4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

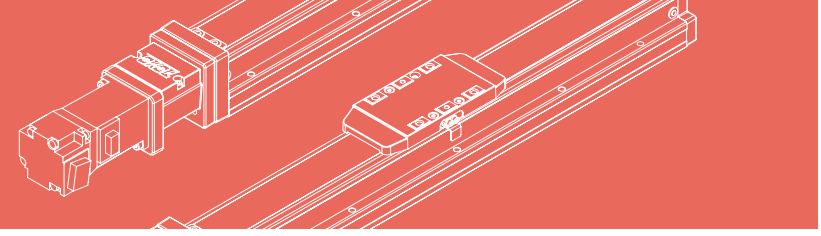
*When the stroke is 25/50/75mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

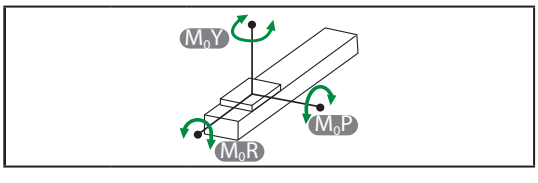


Specification

Item					
	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7 Rolled Ballscrews
		Lead		mm	2
		Maximum Rotating speed※1		rpm	3000
		Maximum linear speed※1		mm/s	100
		Basic dynamic load rating Ca		N	2411
		Basic static load rating Coa		N	5779
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	N	5904
			1000 Km of travel	N	2736
			10000 Km of travel	N	1275
		Static horizontal		N	16904
	Fixed bearing	Basic dynamic load rating Cr		N	1730
		Static load rating Cor		N	3800
	Common Spec	Repeatability		mm	±0.005
		Start torpue		N.cm	7
		Allowable input torque		N.m	1.1
		Maximum acceleration		m/s^2	10
		Friction coefficient			0.03
		Stroke (increments)		mm	25-450 (25 increments)
		Ambient temperature※2		°C	0~+40

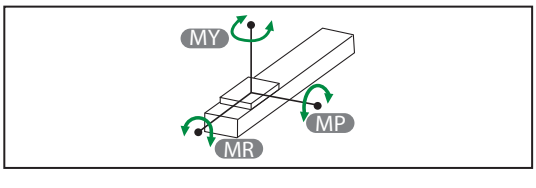
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



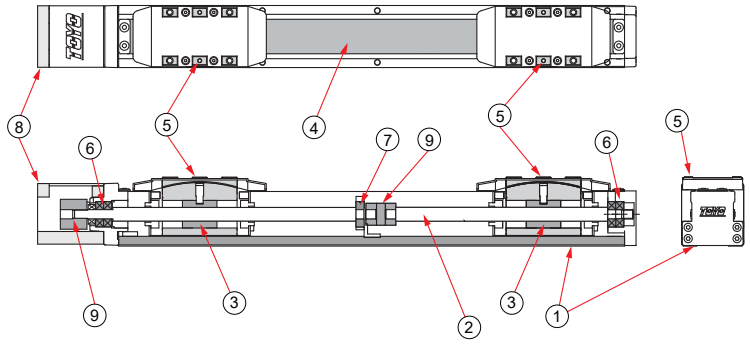
M_0Y	N.m	103
M_0P	N.m	103
M_0R	N.m	144

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	40.8	18.9	8.8
MP	N.m	40.8	18.9	8.8
MR	N.m	58.5	27.2	12.6

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

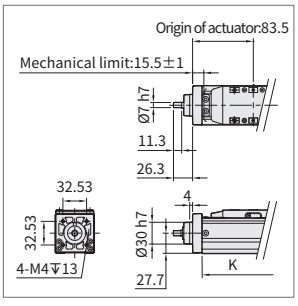
GTH5S

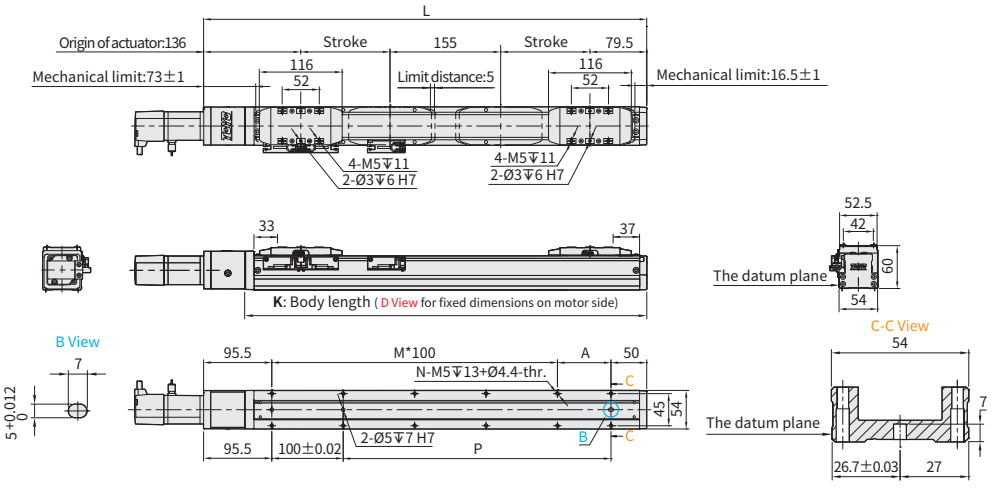
▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

D-View
K Style - No motor mount or coupling



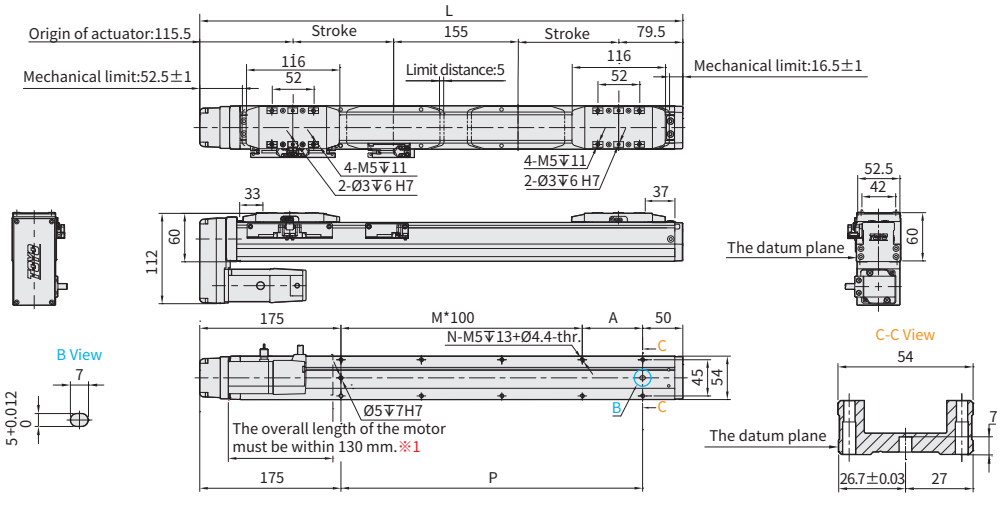


Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460
L	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5
A	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG※1	2.82	3.01	3.21	3.41	3.6	3.8	4	4.19	4.39	4.59	4.78	4.98	5.18	5.38	5.58	5.78	5.98	6.18
K	363	413	463	513	563	613	663	713	763	813	863	913	963	1013	1063	1113	1163	1213
Linear Speed mm/s — Lead 2	100																	

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

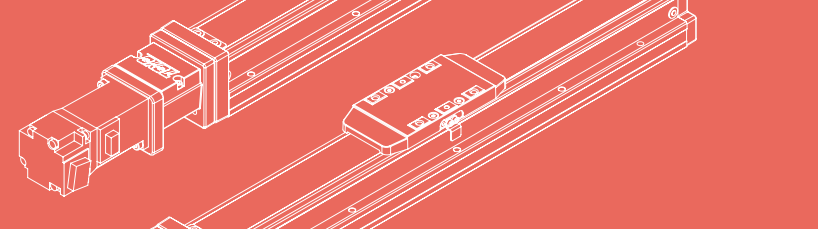
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460
L	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10
N	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24
P	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35
Linear Speed mm/s — Lead 2	100																	

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

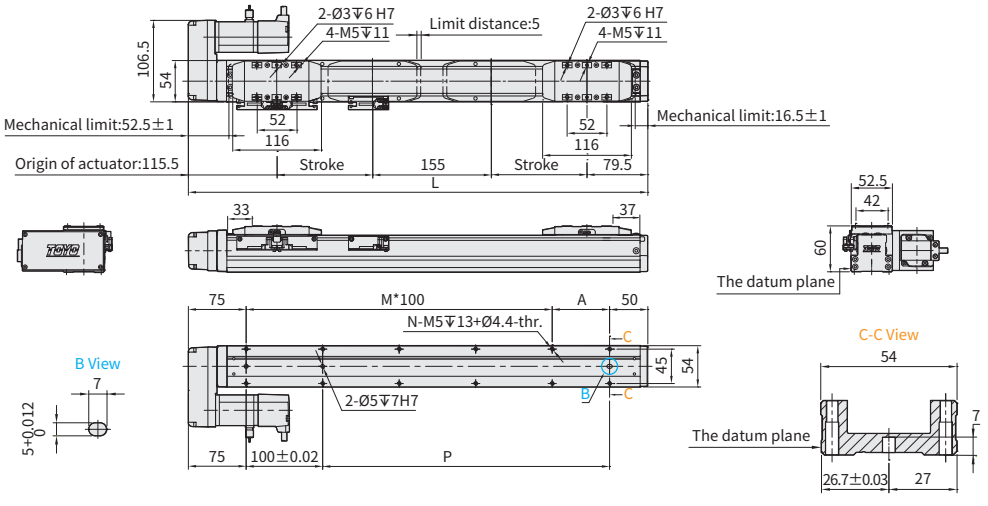


BR Motor Left Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



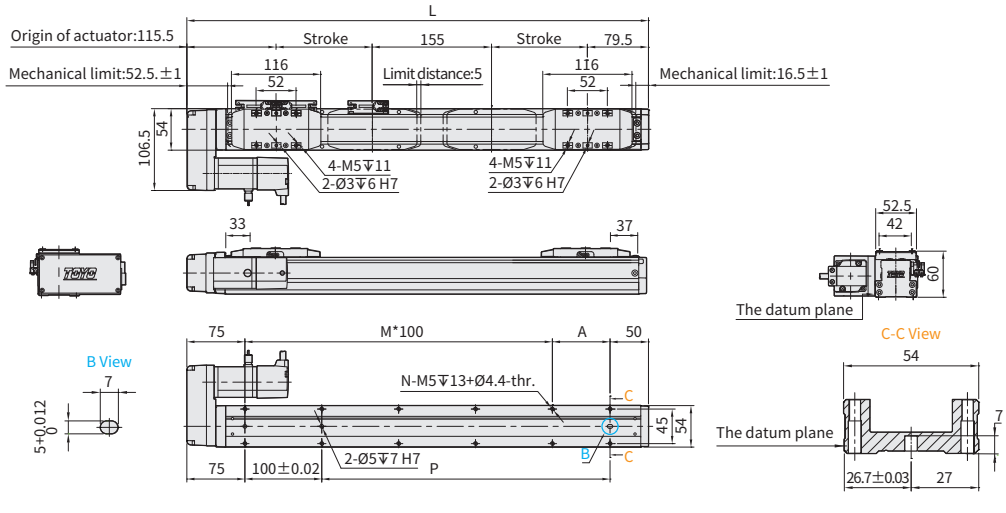
Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450
Limit Stroke (±1)	35	60	85	1110	135	160	185	210	235	260	285	310	335	360	385	410	435	460
L	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35
Linear Speed mm/s — Lead 2	100																	

BL Motor Right Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

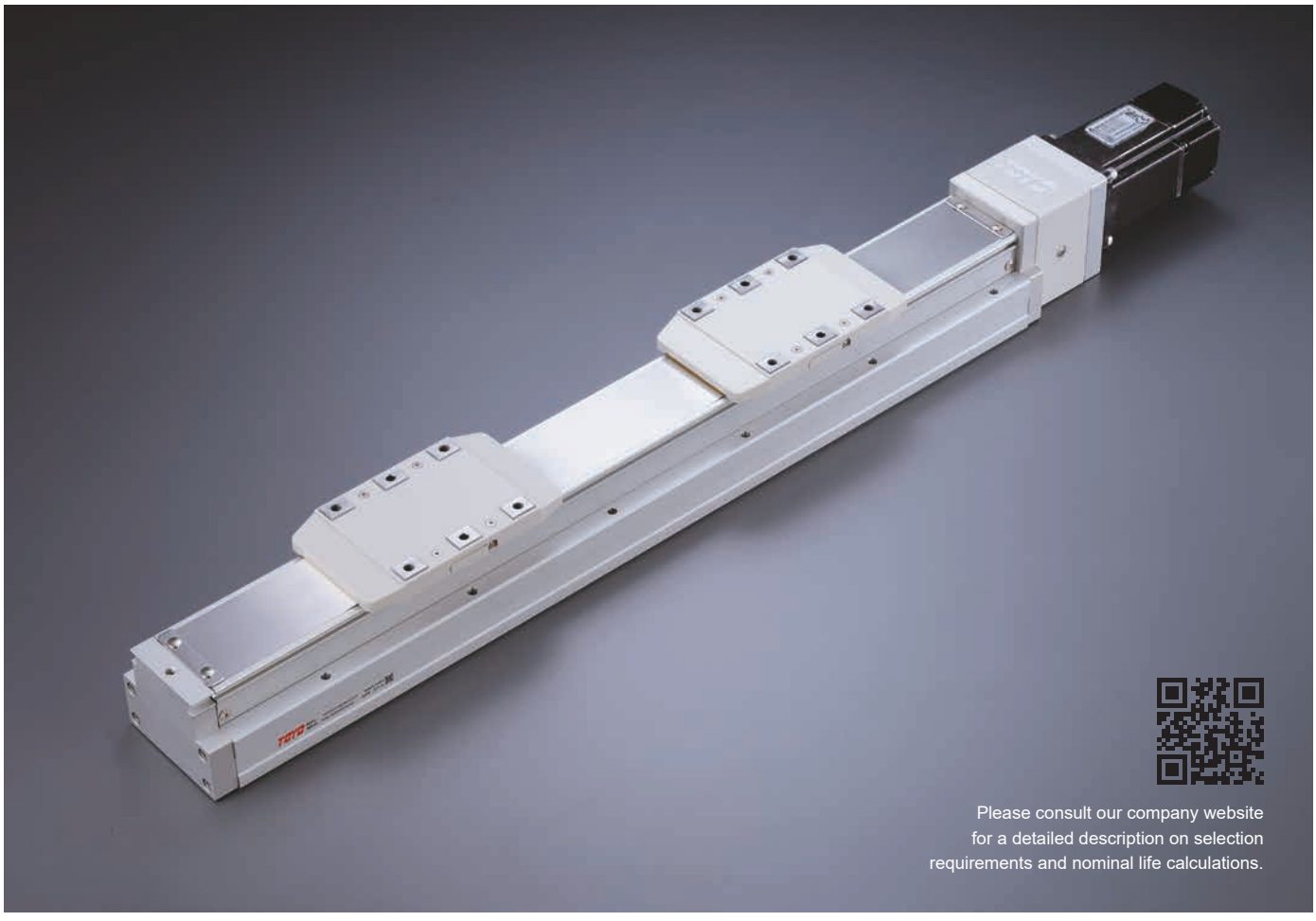
Unit : mm



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460
L	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35
Linear Speed mm/s — Lead 2	100																	

GTH8S

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8S - L 5 - 100 - BC - M20B - C4 - 0001

Model

Special Order No.

Ball Screw Lead

5	5mm

*Dual carriage synchronous movement in reverse direction can only fit at lead of 5mm.

Stroke

25-525mm
25mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B *3
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

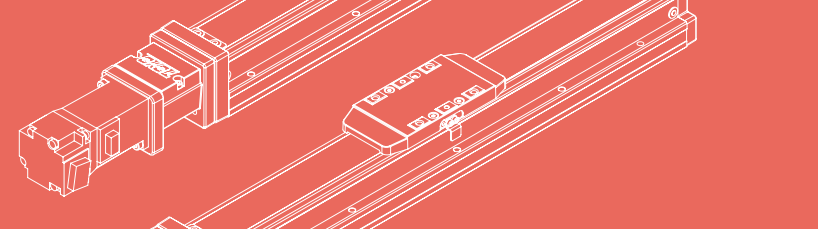
*When the stroke is 25/50/75mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

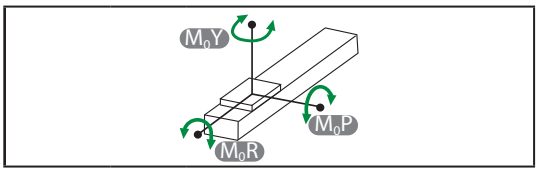


Specification

Item					
	Ball screw	Outer dia. & Precision grade		mm	ø16 & C7 Rolled Ballscrews
		Lead		mm	5
		Maximum Rotating speed※1		rpm	3600
		Maximum linear speed※1		mm/s	300
		Basic dynamic load rating Ca		N	8042
		Basic static load rating Coa		N	15088
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620
			1000 Km of travel	N	8643
			10000 Km of travel	N	4012
		Static horizontal		N	34230
	Fixed bearing	Basic dynamic load rating Cr		N	2600
		Static load rating Cor		N	4750
	Common Spec	Repeatability		mm	±0.005
		Start torpue		N.cm	10
		Allowable input torque		N.m	2.2
		Maximum acceleration		m/s^2	10
		Friction coefficient			0.03
		Stroke (increments)		mm	50-525 (25 increments)
		Ambient temperature※2		°C	0~+40

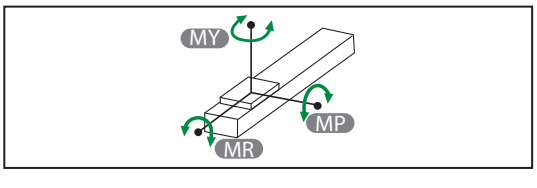
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



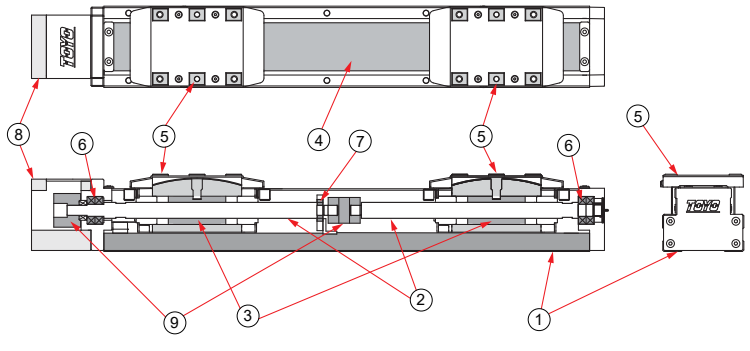
M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



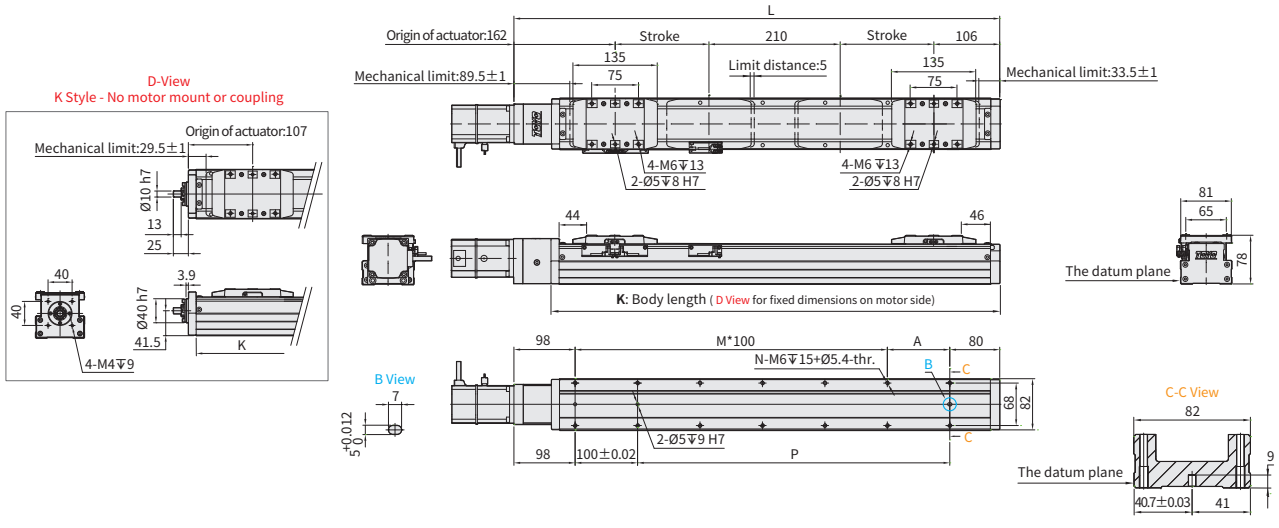
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8S

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

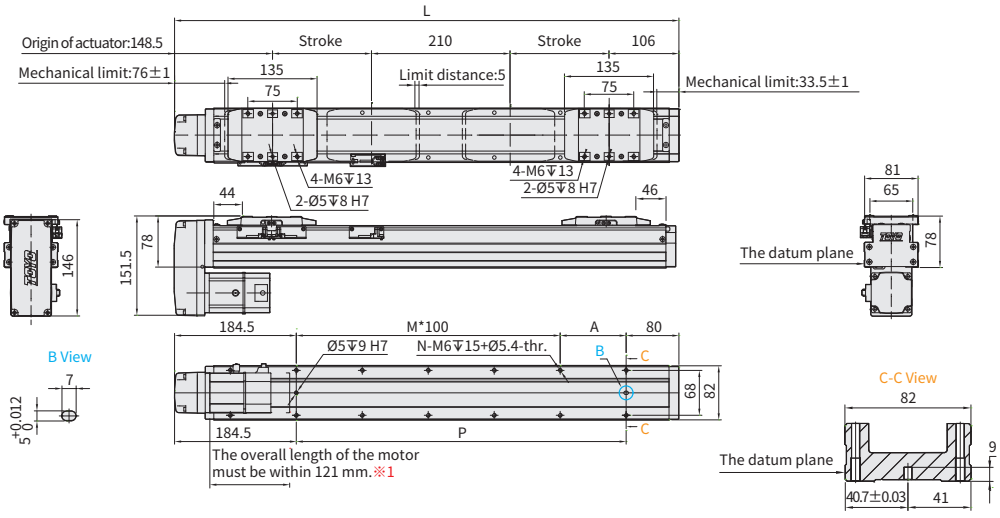


Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.64	7.00	7.37	7.73	8.10	8.46	8.83	9.19	9.56	9.92	10.29	10.65	11.02	11.38	11.75	12.11	12.48	12.85	13.22	13.59	13.96
K	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s — Lead 5	300																				

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

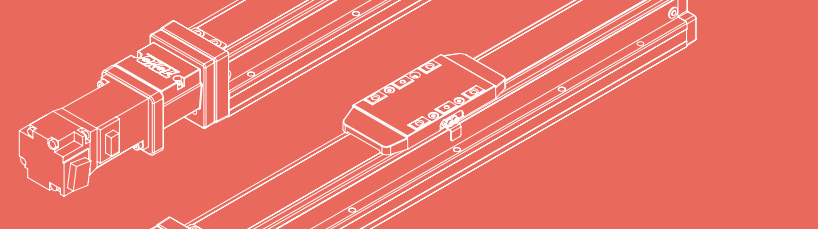
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

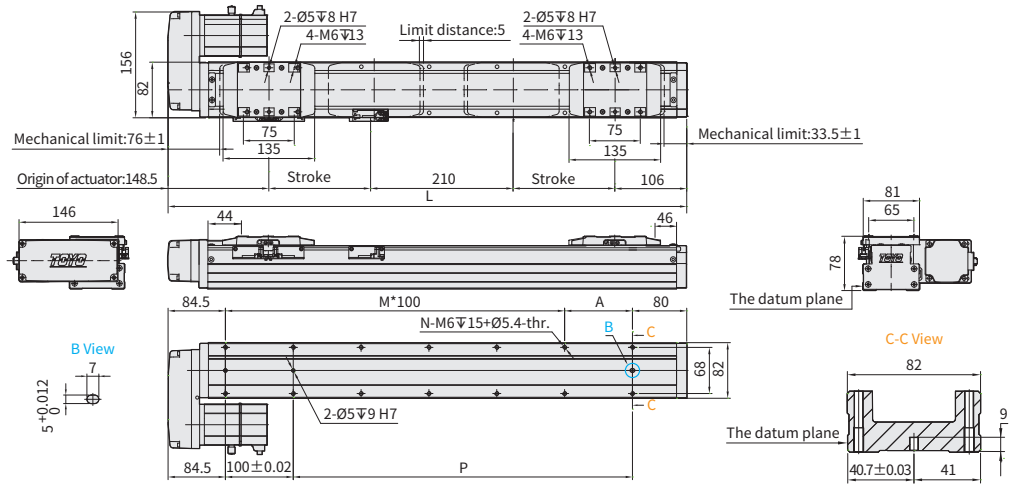


BR Motor Left Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



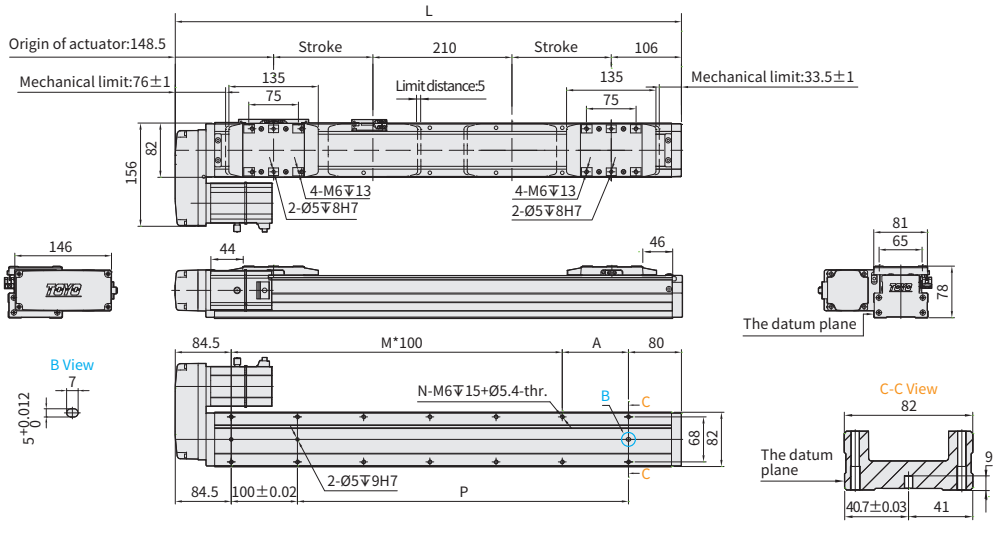
Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

BL Motor Right Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

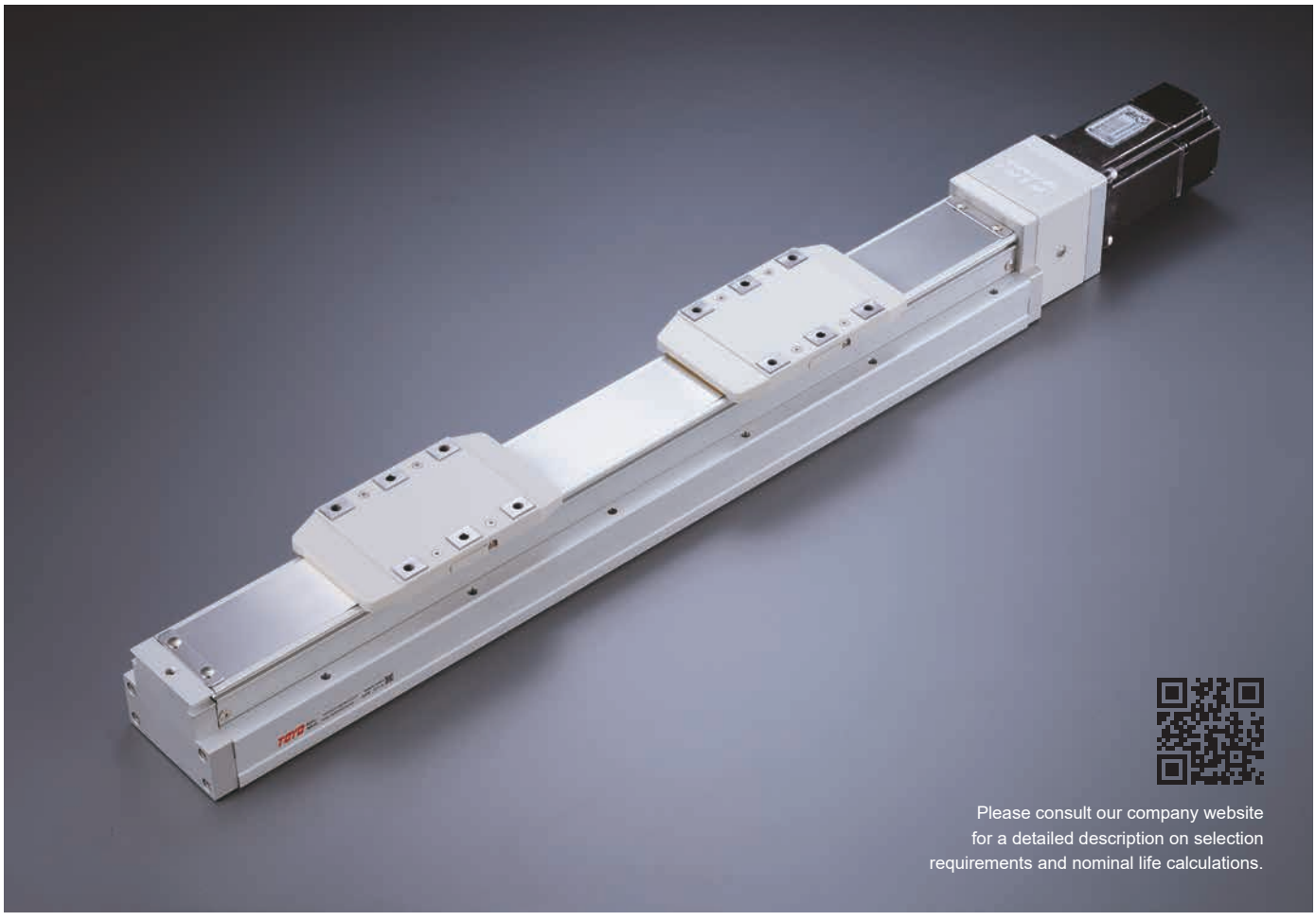
Unit : mm



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

GTH8S

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8S - L 5 - 100 - BC - M40B - C4 - 0001

Model

Special Order No.

Ball Screw Lead

5	5mm

*Dual carriage synchronous movement in reverse direction can only fit at lead of 5mm.

Stroke

25-525mm
25mm increments

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B *3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

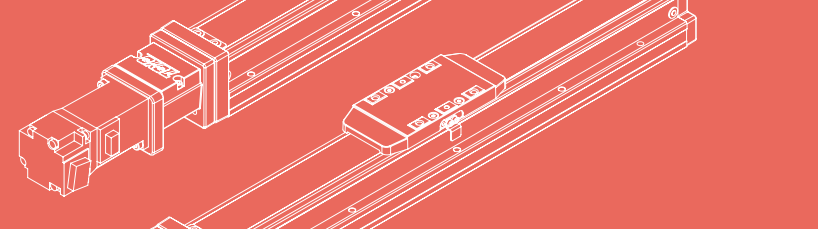
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

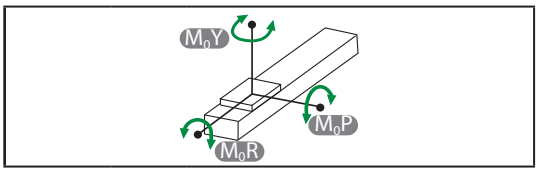


Specification

Item					
	Ball screw	Outer dia. & Precision grade		mm	ø16 & C7 Rolled Ballscrews
		Lead		mm	5
		Maximum Rotating speed※1		rpm	3600
		Maximum linear speed※1		mm/s	300
		Basic dynamic load rating Ca		N	8042
		Basic static load rating Coa		N	15088
		Load factor			1.2
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620
			1000 Km of travel	N	8643
			10000 Km of travel	N	4012
		Static horizontal		N	34230
	Fixed bearing	Basic dynamic load rating Cr		N	2600
		Static load rating Cor		N	4750
	Common Spec	Repeatability		mm	±0.005
		Start torpue		N.cm	10
		Allowable input torque		N.m	2.2
		Maximum acceleration		m/s^2	10
		Friction coefficient			0.03
		Stroke (increments)		mm	50-525 (25 increments)
		Ambient temperature※2		°C	0~+40

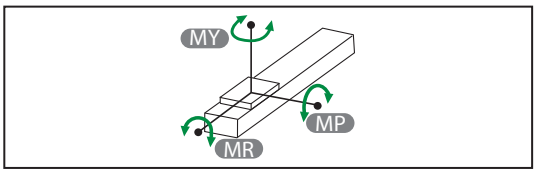
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



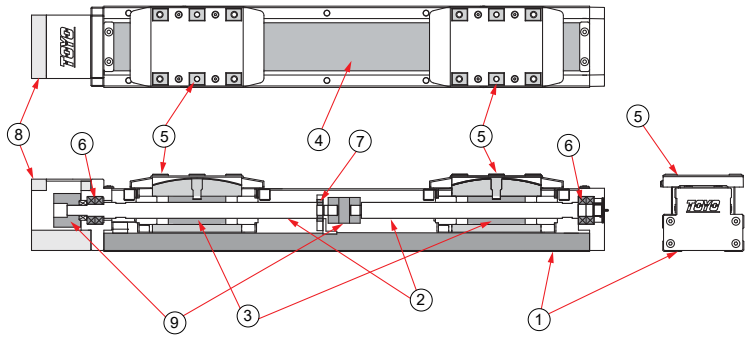
M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



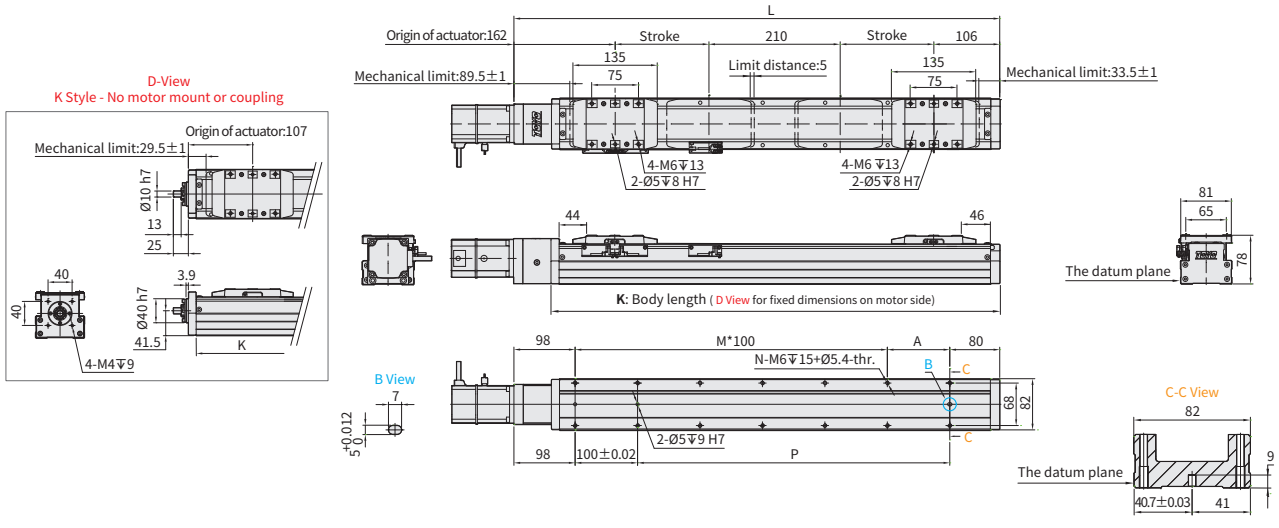
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8S

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

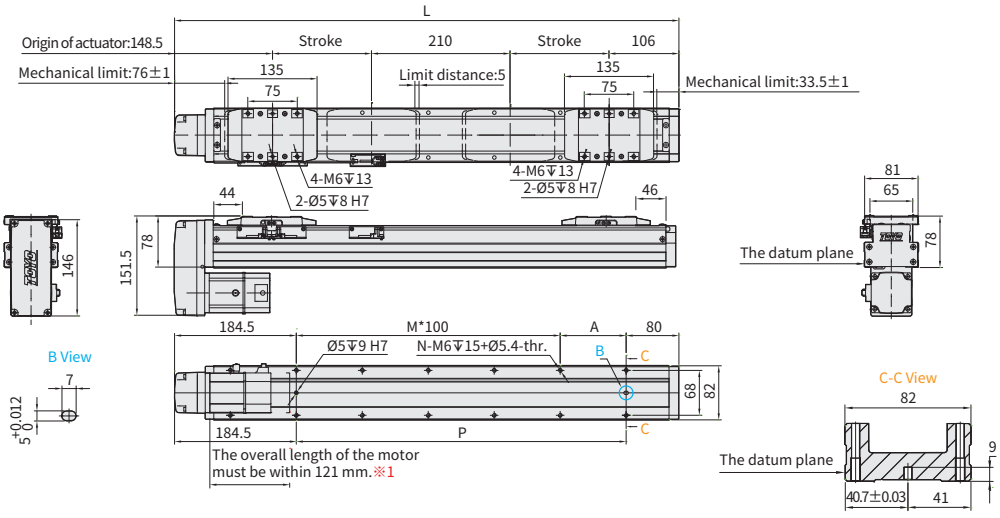


Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.64	7.00	7.37	7.73	8.10	8.46	8.83	9.19	9.56	9.92	10.29	10.65	11.02	11.38	11.75	12.11	12.48	12.85	13.22	13.59	13.96
K	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s — Lead 5	300																				

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

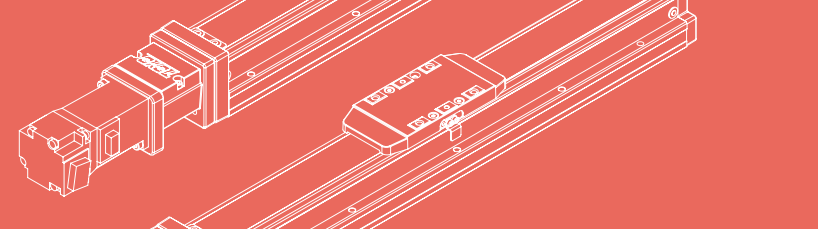
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.

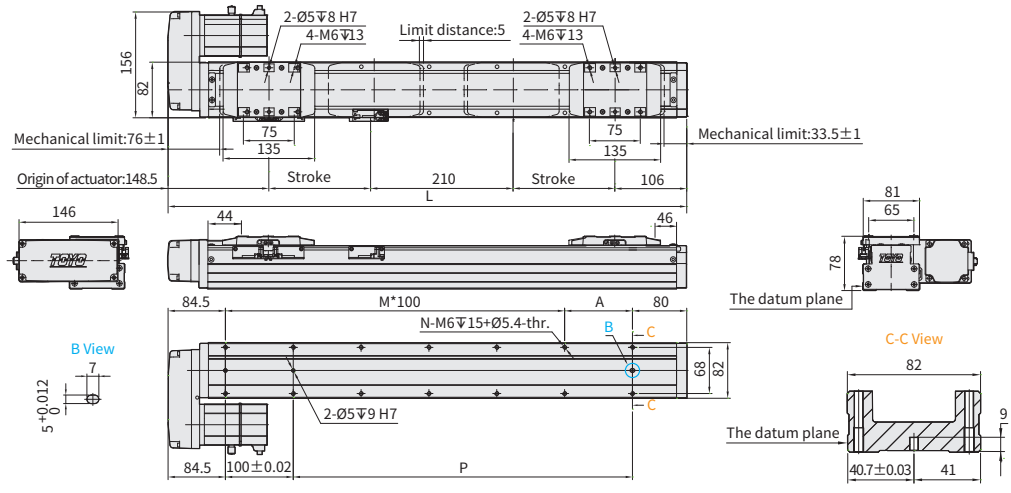


BR Motor Left Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



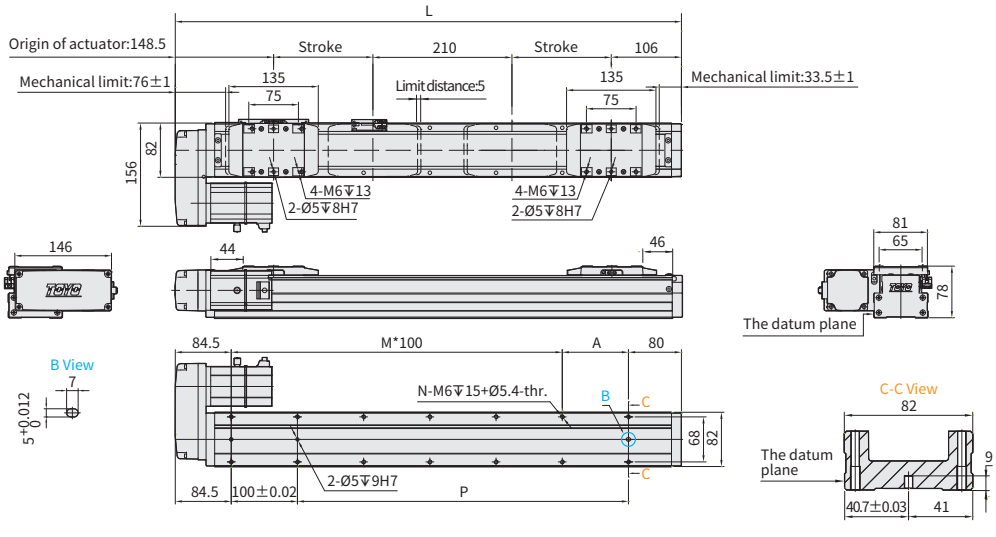
Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

BL Motor Right Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



Stroke	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Limit Stroke (±1)	35	60	85	110	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485	510	535
L	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30
P	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG	7.16	7.68	8.2	8.72	9.24	9.76	10.28	10.8	11.32	11.84	12.36	12.88	13.4	13.92	14.44	14.96	15.48	16	16.52	17.04	17.56
Linear Speed mm/s — Lead 5	300																				

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4D - L2 - 100 - BC - M05B - C4 - 0001

Model

Stroke

50-900mm
50mm increments

Special Order No.

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	50W	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5 *2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5 *2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

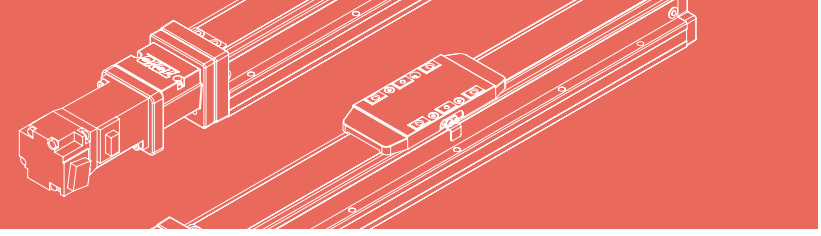
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

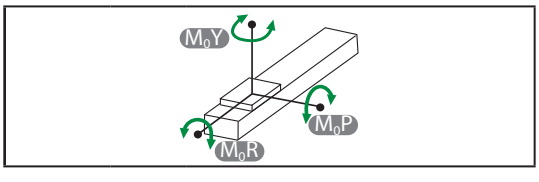


Specification

Item							
	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7 Rolled Ballscrews		
		Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	11179		
			1000 Km of travel	N	5189		
			10000 Km of travel	N	2408		
		Static horizontal		N	20538		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-900 (50 increments)		
		Ambient temperature※2		°C	0~+40		

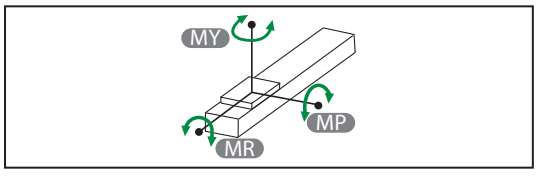
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



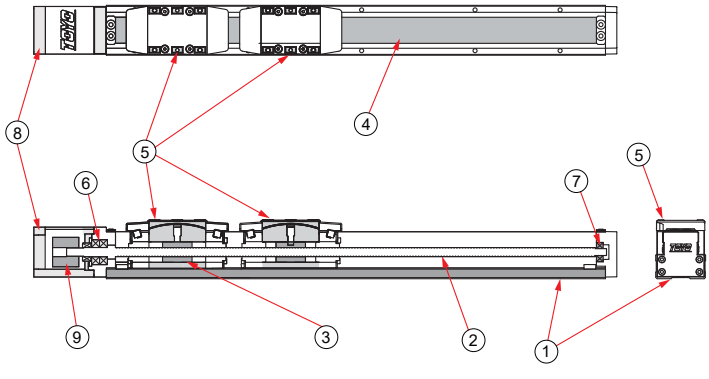
M_0Y	N.m	188
M_0P	N.m	762
M_0R	N.m	762

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	120.5	55.9	26
MP	N.m	120.5	55.9	26
MR	N.m	60.7	28.2	13.1

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

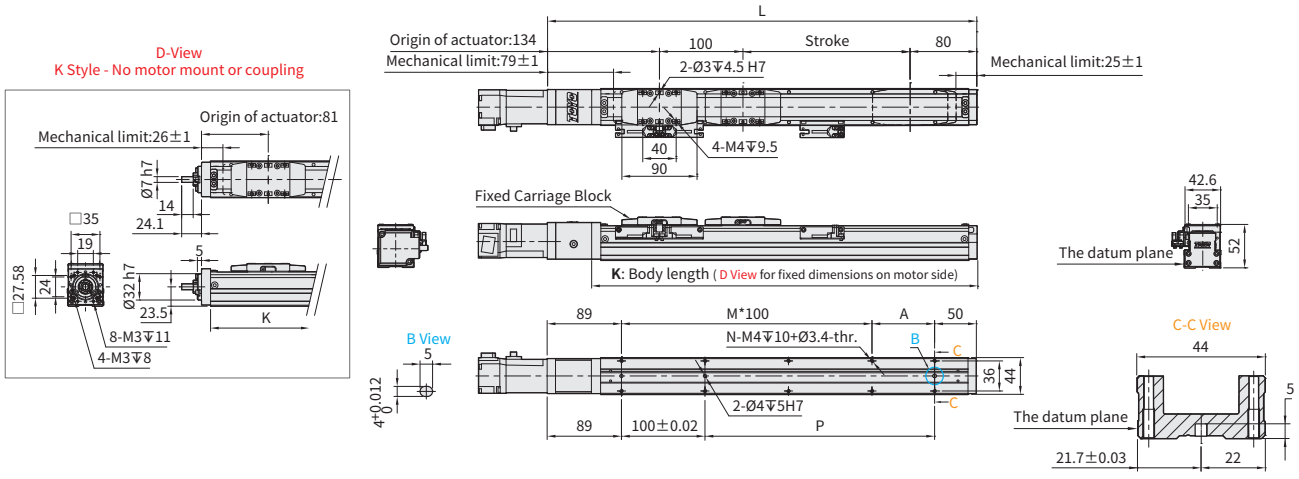
GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

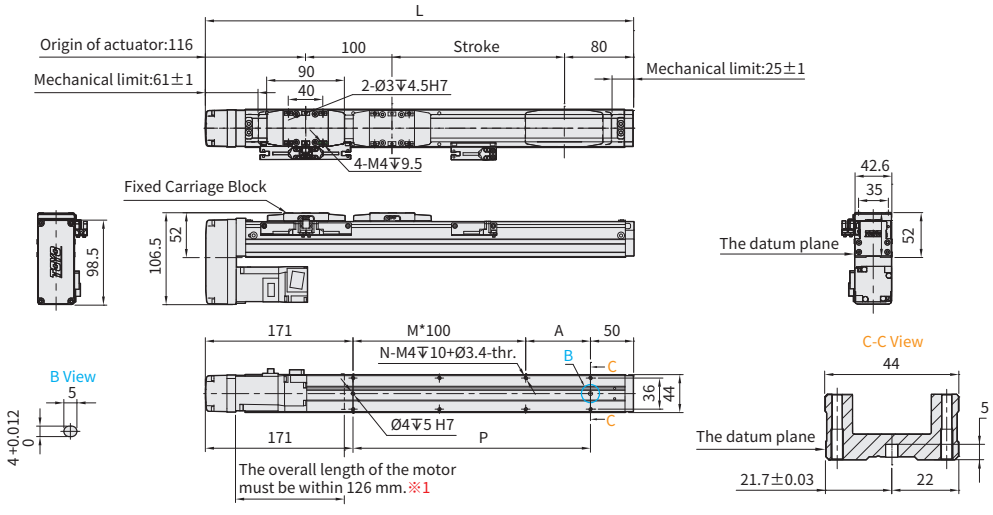


Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG※1		1.56	1.74	1.92	2.1	2.28	2.46	2.64	2.82	3	3.18	3.36	3.54	3.72	3.9	4.08	4.26	4.44	4.62
K		311	361	411	461	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

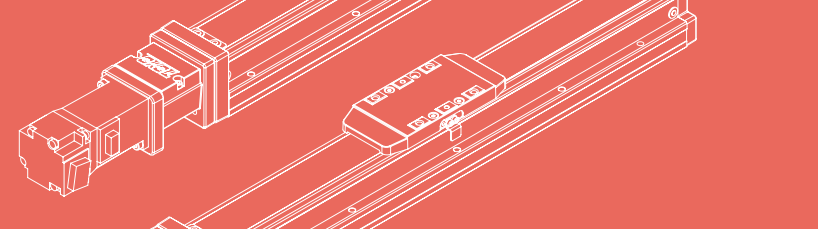
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

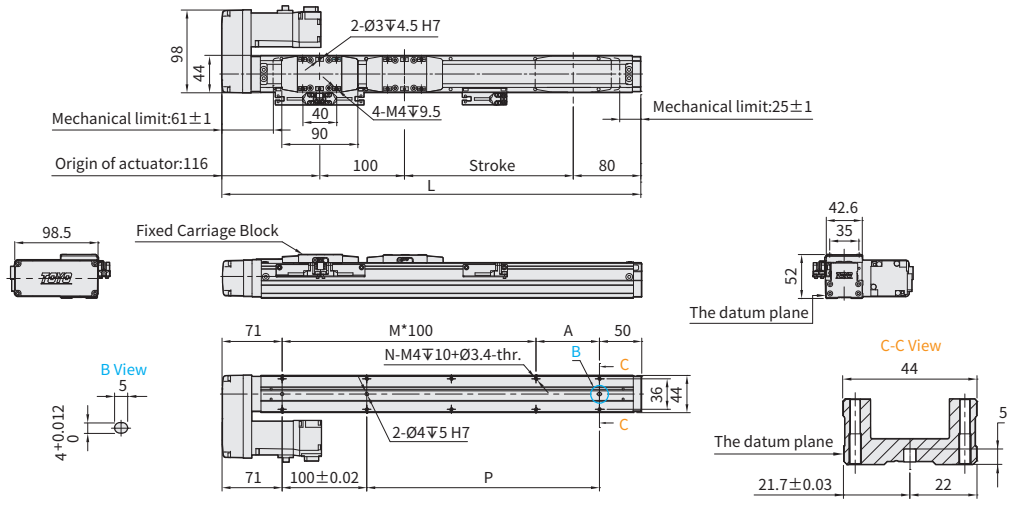
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



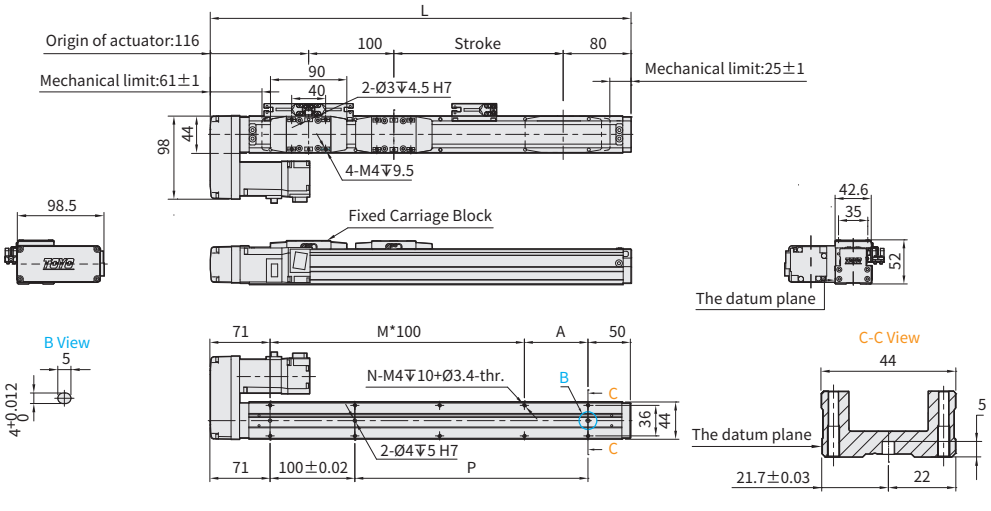
Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4D - L2 - 100 - BC - M10B - C4 - 0001

Model

Special Order No.

Stroke

50-900mm
50mm increments

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5*2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling*4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

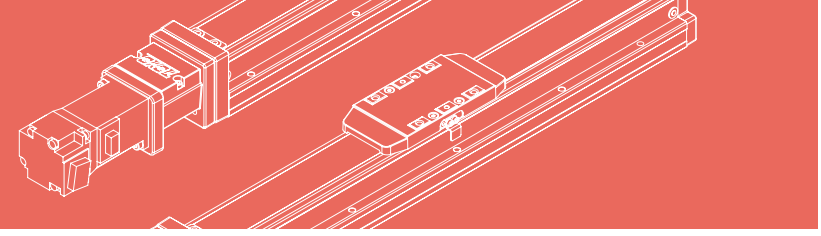
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

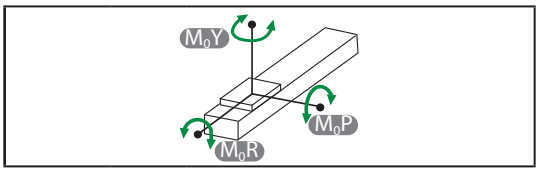


Specification

Item							
	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7 Rolled Ballscrews		
		Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	11179		
			1000 Km of travel	N	5189		
			10000 Km of travel	N	2408		
		Static horizontal		N	20538		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-900 (50 increments)		
		Ambient temperature※2		°C	0~+40		

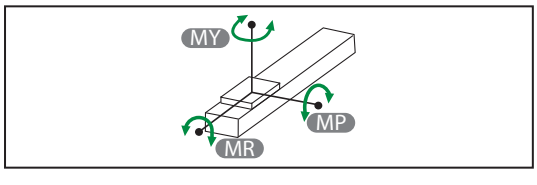
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



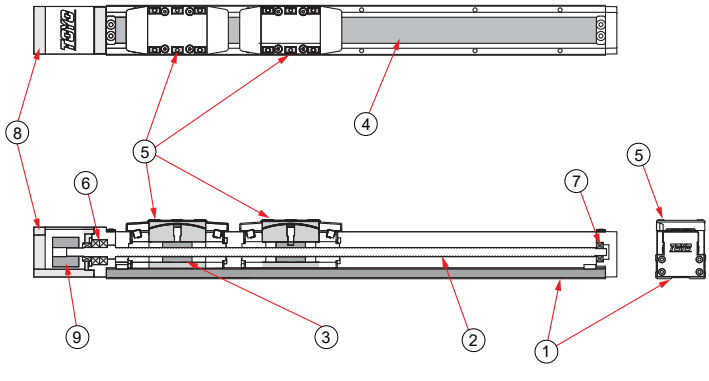
M₀Y	N.m	188
M₀P	N.m	762
M₀R	N.m	762

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	120.5	55.9	26
MP	N.m	120.5	55.9	26
MR	N.m	60.7	28.2	13.1

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

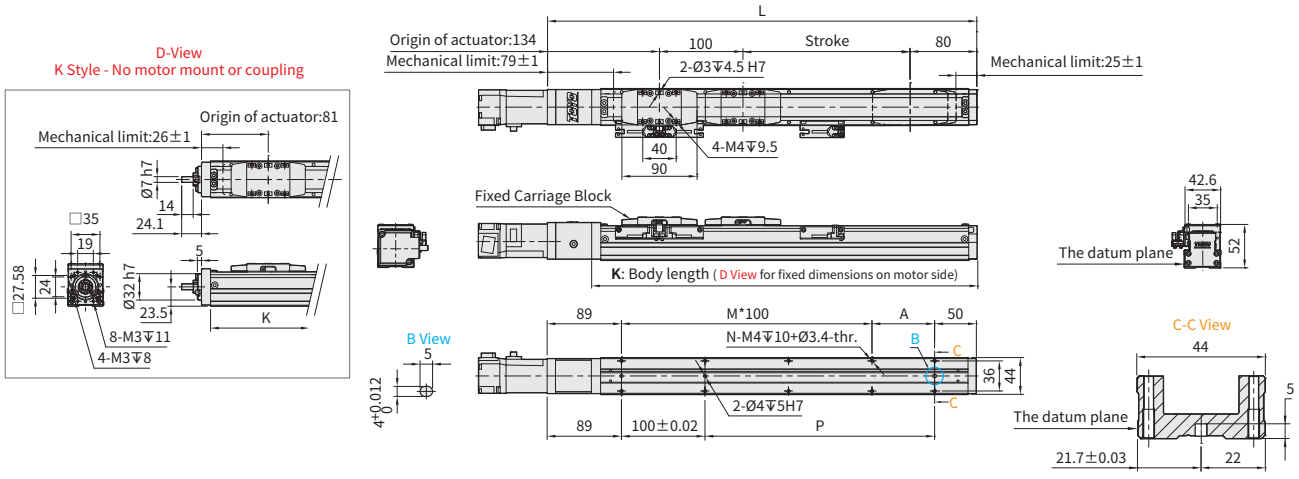
GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

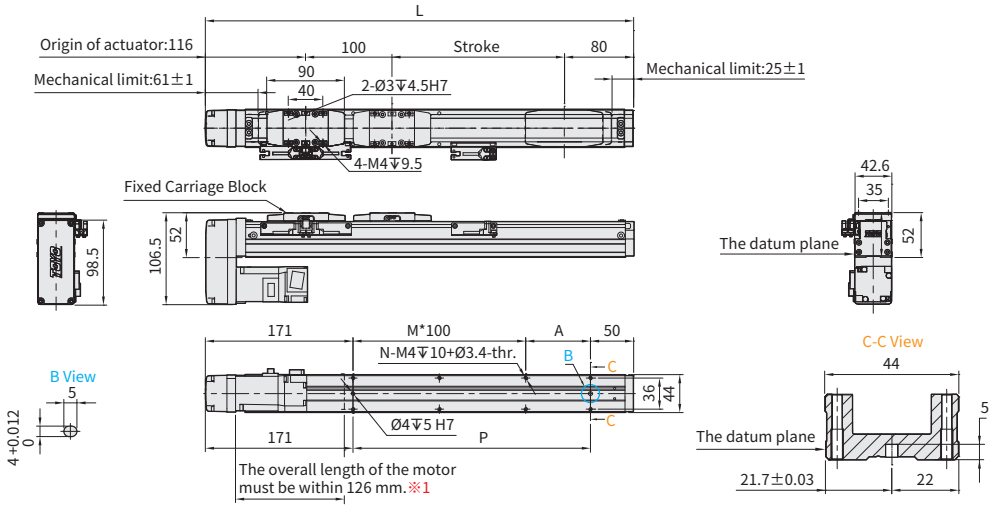


Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG※1		1.56	1.74	1.92	2.1	2.28	2.46	2.64	2.82	3	3.18	3.36	3.54	3.72	3.9	4.08	4.26	4.44	4.62
K		311	361	411	461	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

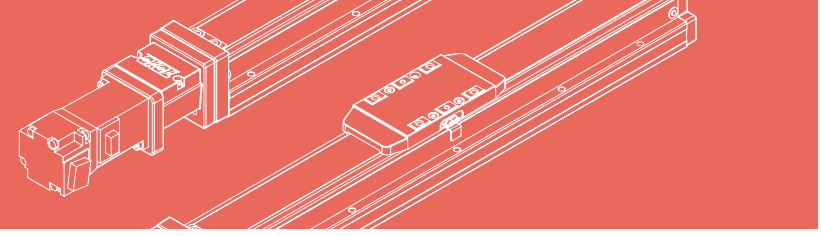
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

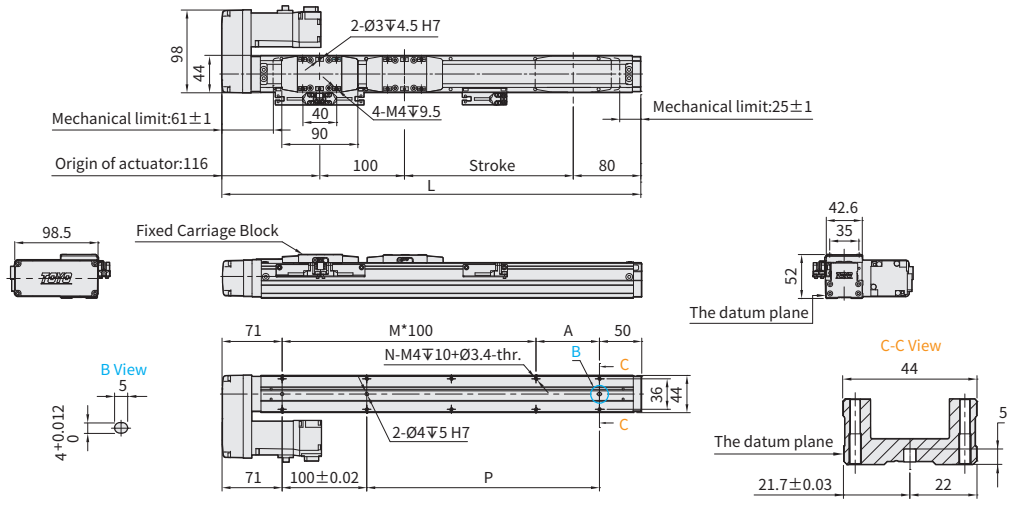
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



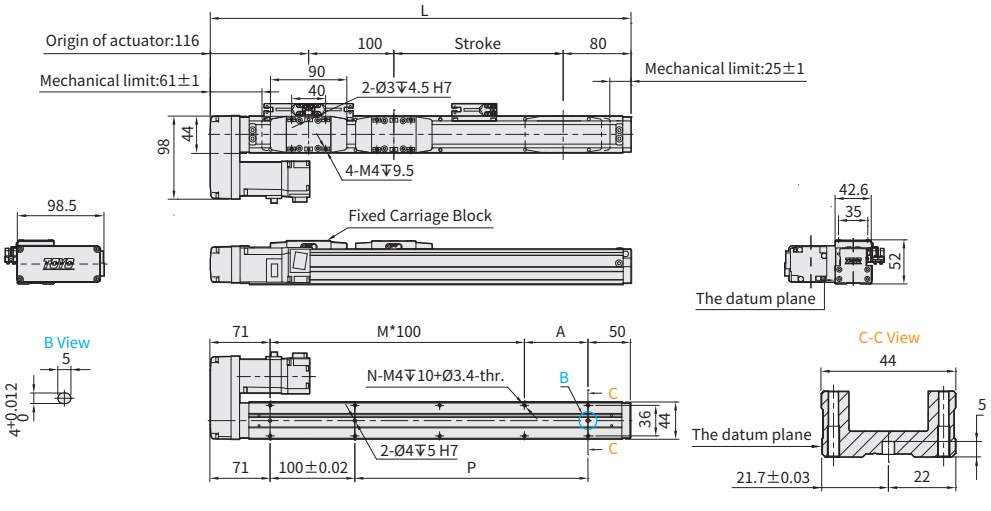
Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920
L		346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		125	175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975
KG		1.67	1.85	2.03	2.21	2.39	2.57	2.75	2.93	3.11	3.29	3.47	3.65	3.83	4.01	4.19	4.37	4.55	4.73
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	43	40	37	33
	Lead 6	360							330	320	270	240	210	180	150	130	120	110	100
	Lead 12	720							660	640	540	480	420	360	300	260	240	220	200

※2 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH5D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH5D - L 5 - 160 - BC - M10B - C4 - 0001

Model

Special Order No.

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

2	2mm
5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews
60-910mm (50mm increments)
Ground Ballscrews
60-160mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5 *2			
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

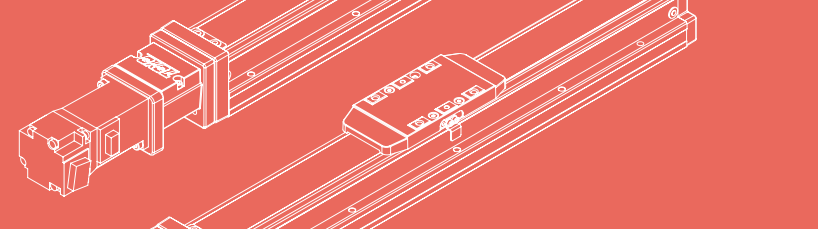
*When the stroke is 60mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor



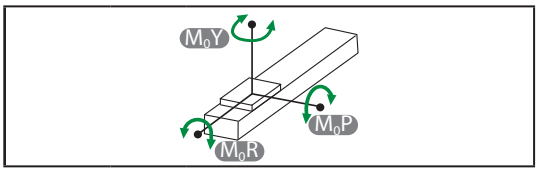
Specification

Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews
		Repeatability		mm	±0.005		±0.003
		Stroke (increments)		mm	60-910mm (50 increments)		60-160mm (50 increments)

Item	Ball screw	Outer dia. & Precision grade		mm	Ø12			
		Lead		mm	2	5	10	20
		Maximum Rotating speed※1		rpm	3000	3600	3600	3600
		Maximum linear speed※1		mm/s	100	300	600	1200
		Basic dynamic load rating Ca		N	2411	4829	4680	11284
		Basic static load rating Coa		N	5779	7836	7649	20410
		Load factor			1.2	1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	13661			
			1000 Km of travel	N	6341			
			10000 Km of travel	N	2943			
		Static horizontal		N	27384			
	Fixed bearing	Basic dynamic load rating Cr		N	1730			
		Static load rating Cor		N	3800			
	Common Spec	Start torpue		N.cm	7			
		Allowable input torque		N.m	1.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Ambient temperature※2		°C	0~+40			

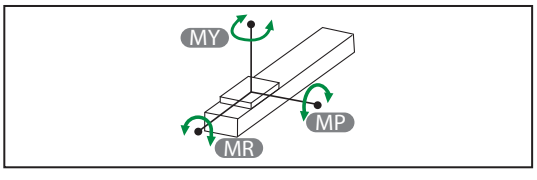
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



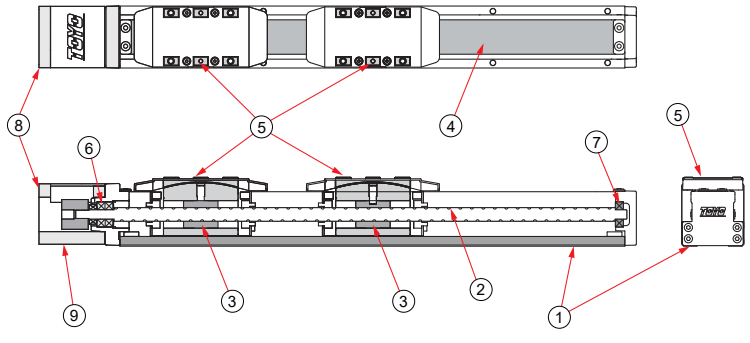
M_0Y	N.m	231
M_0P	N.m	1038
M_0R	N.m	1038

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	206.1	95.7	44.4
MP	N.m	206.1	95.7	44.4
MR	N.m	94.8	44	20.4

Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH5D

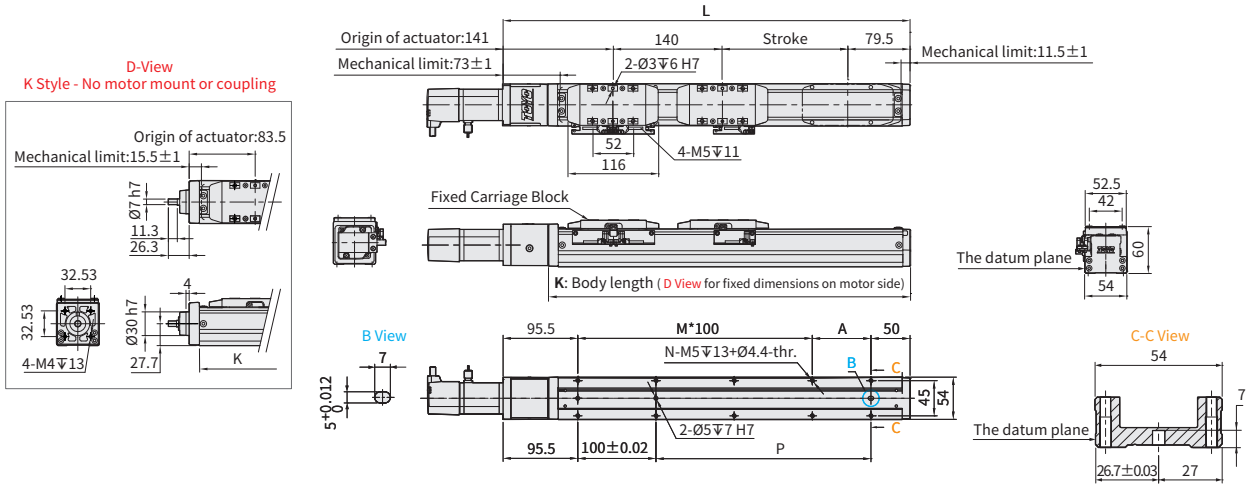
▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed

2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke		60※2	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810	860	910
Limit Stroke (±1)		80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880	930
L		420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5
A		75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		2.62	2.92	3.01	3.06	3.26	3.37	3.46	3.66	3.76	3.95	4.09	4.22	4.6	4.98	5.36	5.74	6.12	6.5
K		363	413	463	513	563	613	663	713	763	813	863	913	963	1013	1063	1113	1163	1213
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	47	40	37	33
	Lead 5	300							292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600							583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200							1167	1000	900	800	700	600	500	467	400	367	333

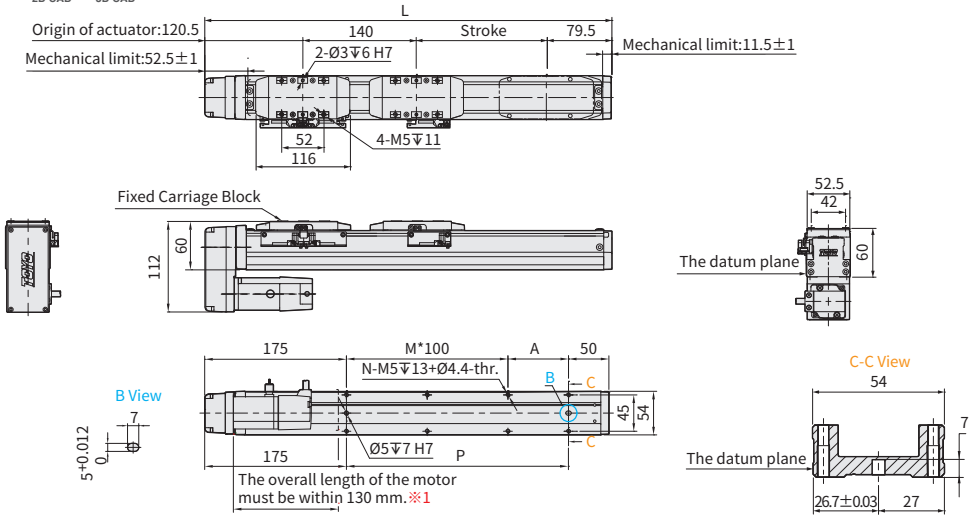
※2 When the stroke is 60mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

Unit : mm

BM Motor Bottom Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke		60※2	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810	860	910
Limit Stroke (±1)		80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880	930
L		400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10
N		6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24
P		175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		2.65	2.93	3.04	3.09	3.29	3.4	3.49	3.69	3.82	3.98	4.11	4.25	4.63	5.01	5.39	5.77	6.15	6.53
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	47	40	37	33
	Lead 5	300							292	250	225	200	175	150	125	117	100	92	83
	Lead 10	600							583	500	450	400	350	300	250	233	200	183	167
	Lead 20	1200							1167	1000	900	800	700	600	500	467	400	367	333

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 60mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
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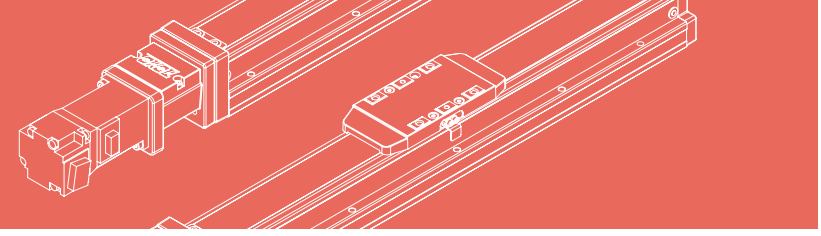
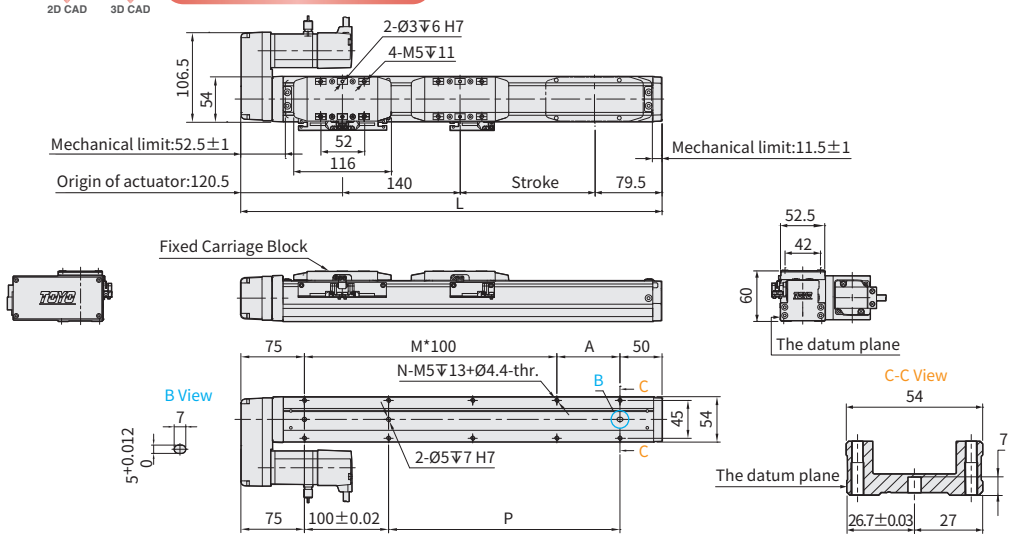


Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		60※2	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810	860	910
Limit Stroke (±1)		80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880	930
L		400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		2.65	2.93	3.04	3.09	3.29	3.4	3.49	3.69	3.82	3.98	4.11	4.25	4.63	5.01	5.39	5.77	6.15	6.53
Linear Speed mm/s	Lead 2	100									90	80	70	60	50	47	40	37	33
	Lead 5	300							292	250	225	200	175	150	125	117	100	92	83
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	Lead 20	1200							1167	1000	900	800	700	600	500	467	400	367	333

※2 When the stroke is 60mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
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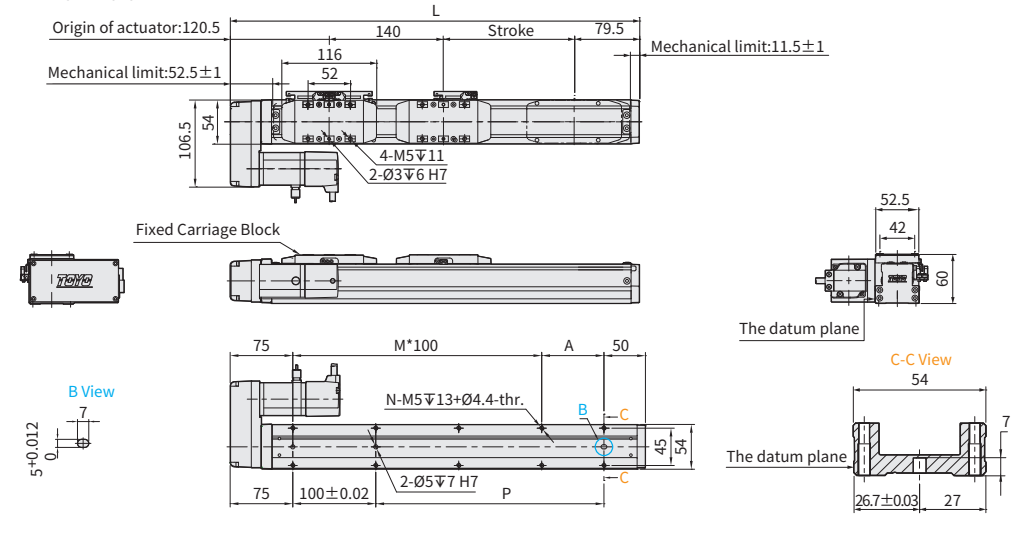
Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		60※2	110	160	210	260	310	360	410	460	510	560	610	660	710	760	810	860	910
Limit Stroke (±1)		80	130	180	230	280	330	380	430	480	530	580	630	680	730	780	830	880	930
L		400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
A		75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26
P		175	225	275	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025
KG		2.65	2.93	3.04	3.09	3.29	3.4	3.49	3.69	3.82	3.98	4.11	4.25	4.63	5.01	5.39	5.77	6.15	6.53
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GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH8D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8D - L10 - 100 - BC - M20B - C4 - 0001

Model

Special Order No.

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews	
50-1100mm (50mm increments)	
Ground Ballscrews	
50-550mm (50mm increments)	

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

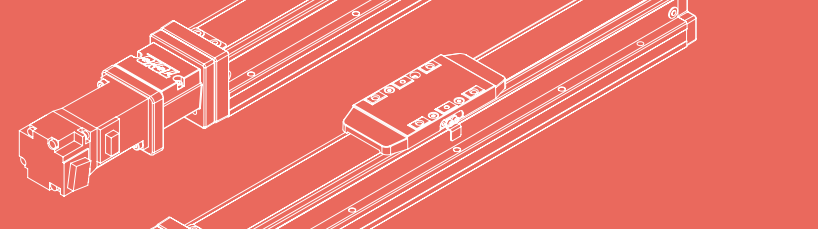
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor



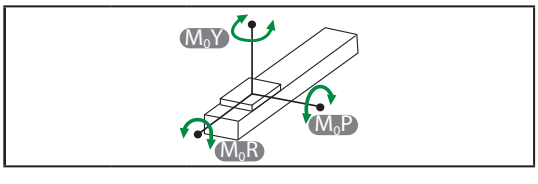
Specification

Item						
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1100mm (50 increments)	50-550mm (50 increments)

Item							
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16		
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	30164		
			1000 Km of travel	N	14001		
			10000 Km of travel	N	6499		
		Static horizontal		N	55452		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

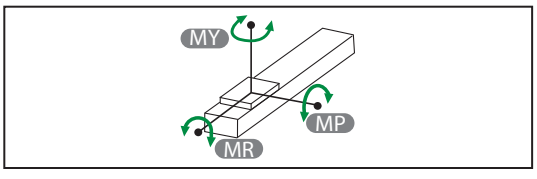
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



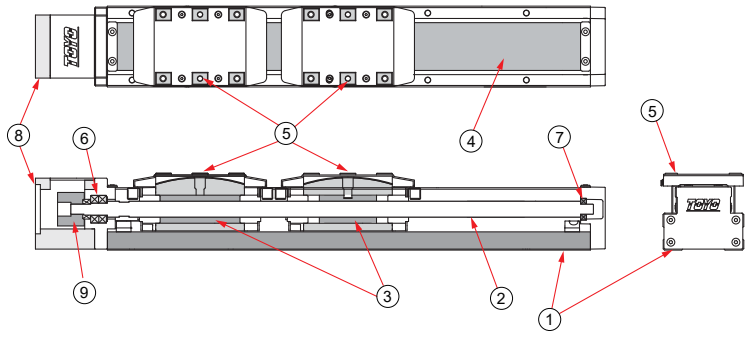
M_0Y	N.m	1011
M_0P	N.m	2565
M_0R	N.m	2565

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	487.6	226.3	105
MP	N.m	487.6	226.3	105
MR	N.m	327	151.8	70.4

Parts list



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4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8D

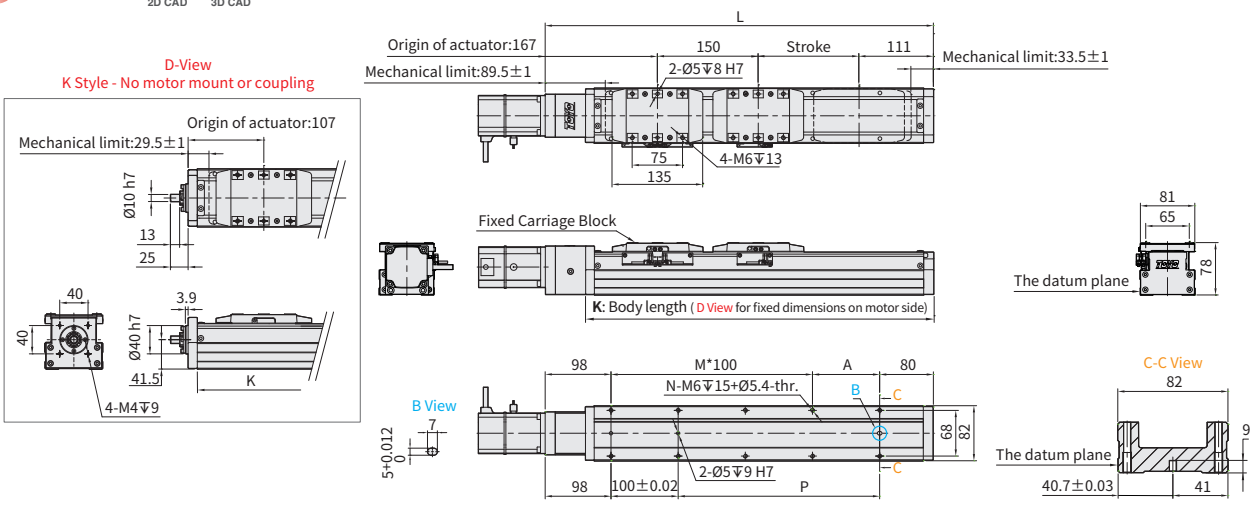
▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed

2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke	50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.47	6.82	7.15	7.47	7.82	8.11	8.44	8.88	9.18	9.59	9.88	10.12	10.43	10.84	11.09	11.48	11.75	12.17	12.59	13.01	13.43	13.85
K	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
Linear Speed mm/s Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
Linear Speed mm/s Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
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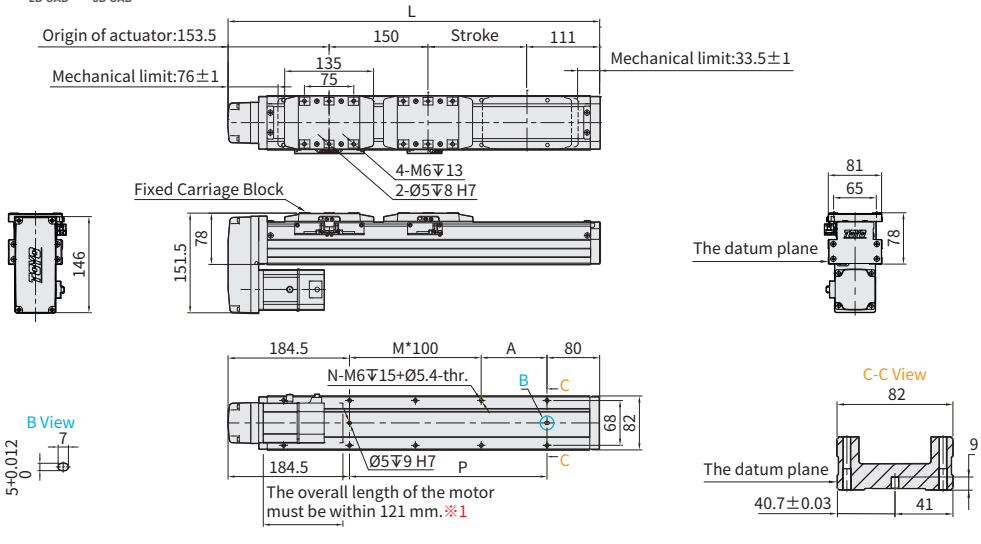
Unit : mm

BM Motor Bottom Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com



Stroke	50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
Linear Speed mm/s Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
Linear Speed mm/s Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
Linear Speed mm/s Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

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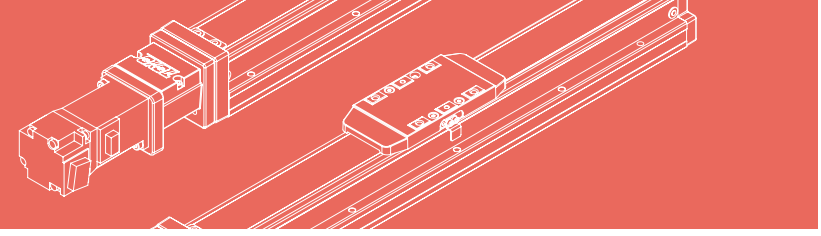
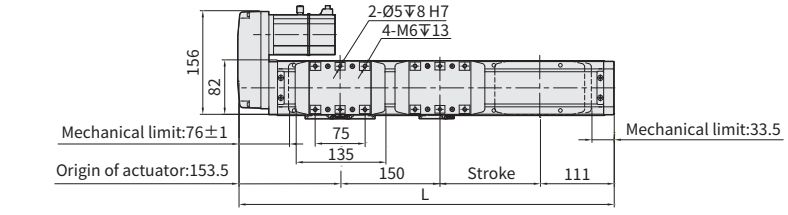
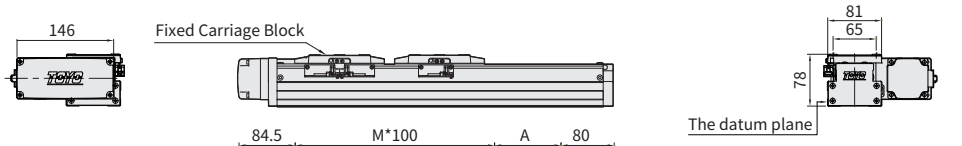


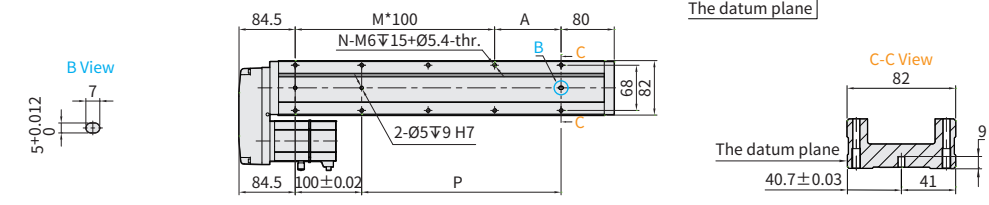
Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com







Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
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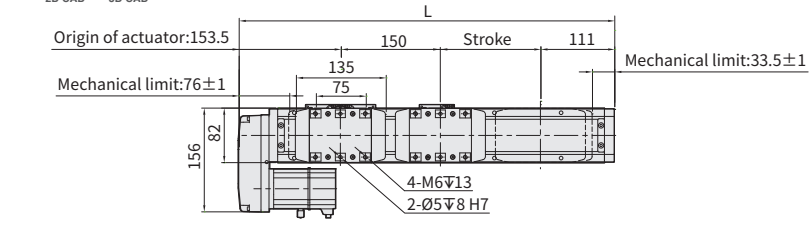
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
Linear Speed mm/s	Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

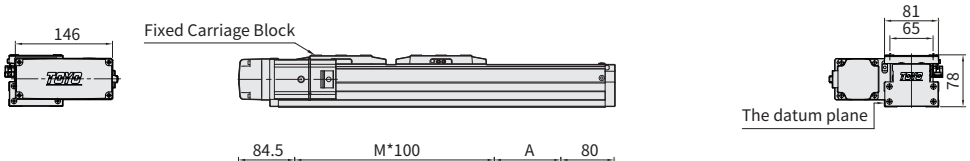
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

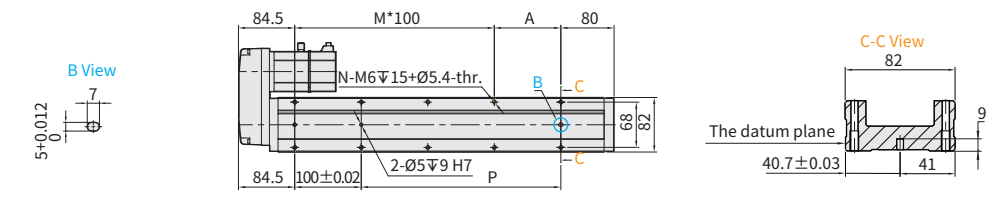
Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com







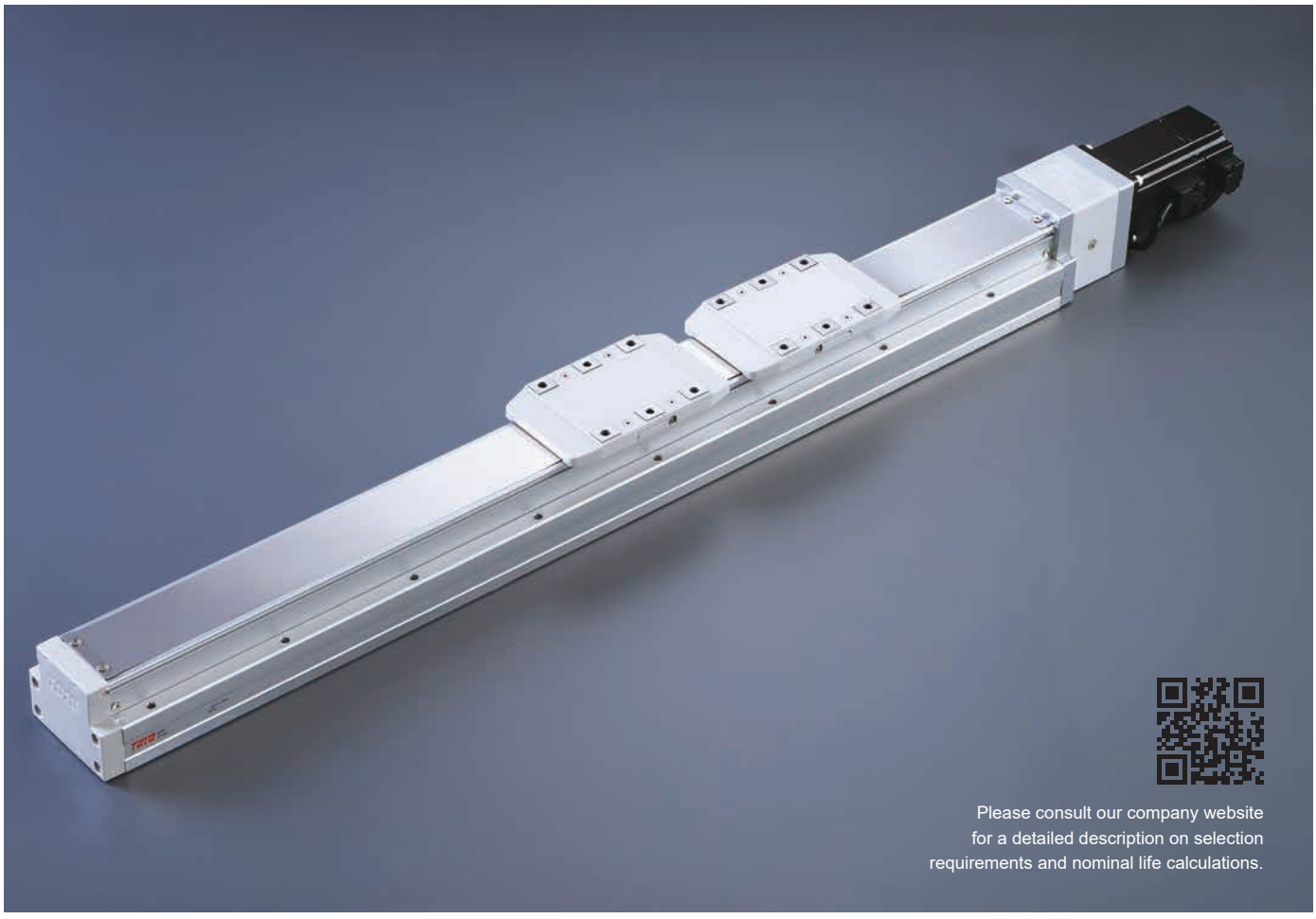
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
Linear Speed mm/s	Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH8D

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8D - L10 - 100 - BC - M40B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews	
50-1100mm (50mm increments)	
Ground Ballscrews	
50-550mm (50mm increments)	

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 50mm, the sensor installation has the following restrictions:

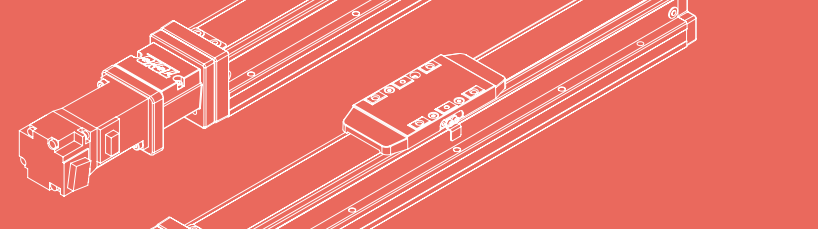
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.



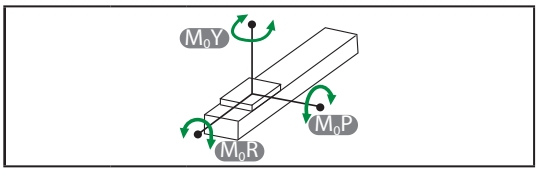
Specification

Item						
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1100mm (50 increments)	50-550mm (50 increments)

Item							
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16		
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	30164		
			1000 Km of travel	N	14001		
			10000 Km of travel	N	6499		
		Static horizontal		N	55452		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

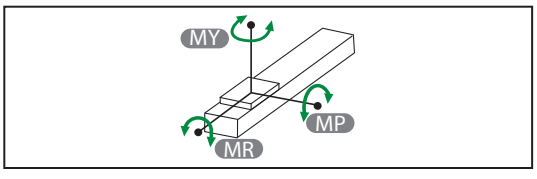
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



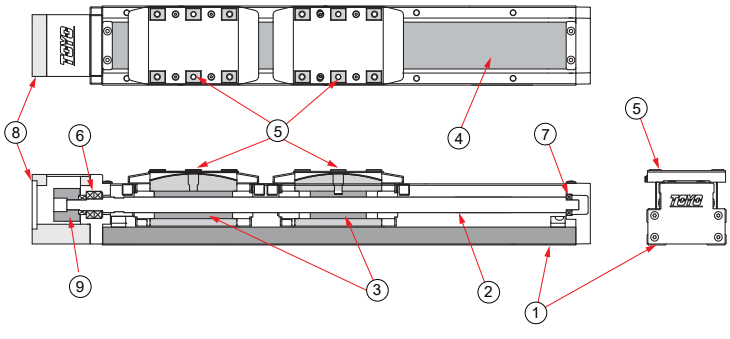
M_0Y	N.m	1011
M_0P	N.m	2565
M_0R	N.m	2565

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	487.6	226.3	105
MP	N.m	487.6	226.3	105
MR	N.m	327	151.8	70.4

Parts list



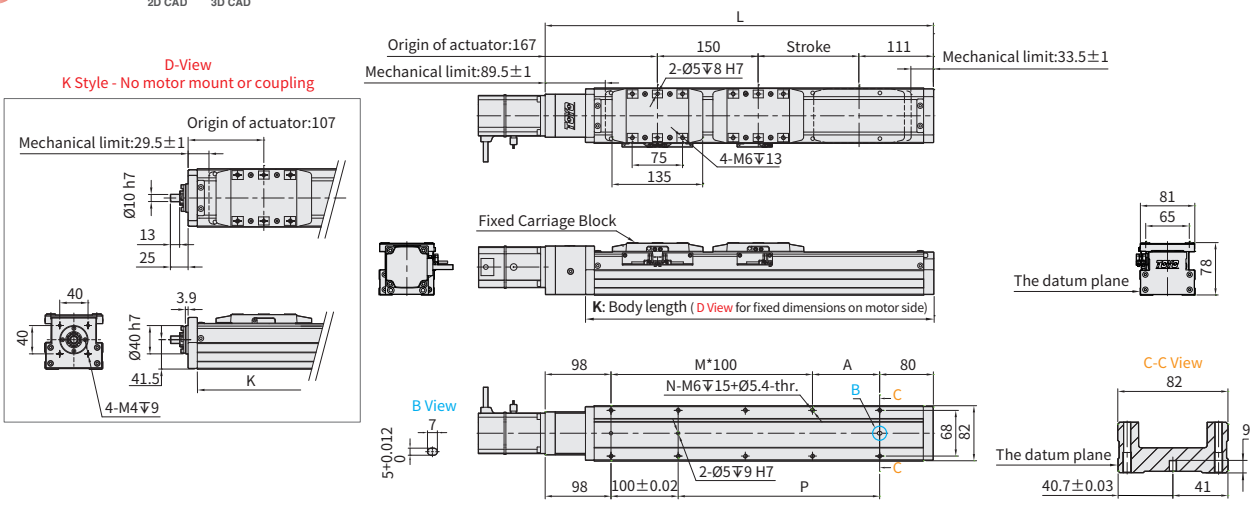
No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH8D

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

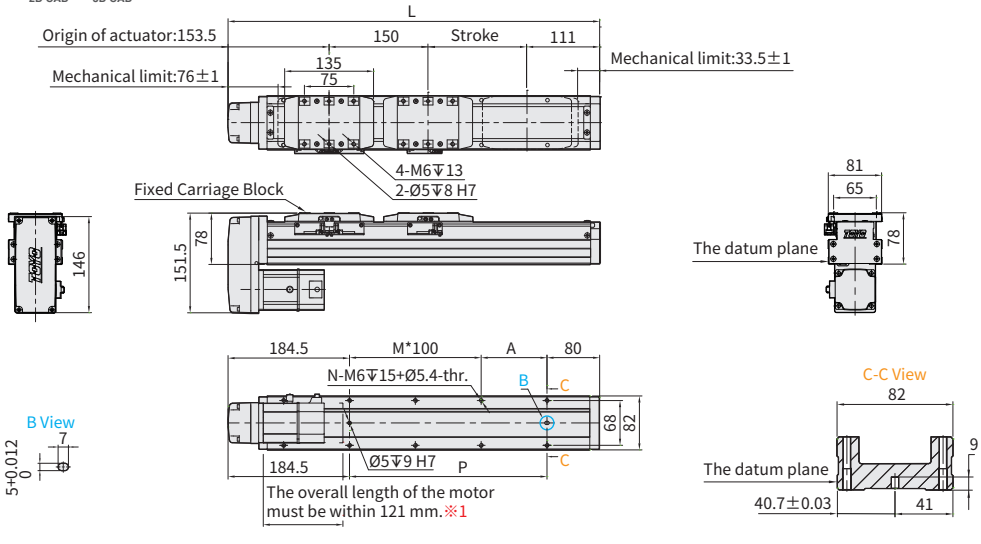


Stroke	50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378	1428	1478	1528
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.47	6.82	7.15	7.47	7.82	8.11	8.44	8.88	9.18	9.59	9.88	10.12	10.43	10.84	11.09	11.48	11.75	12.17	12.59	13.01	13.43	13.85
K	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468
Linear Speed mm/s Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
Linear Speed mm/s Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
Linear Speed mm/s Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

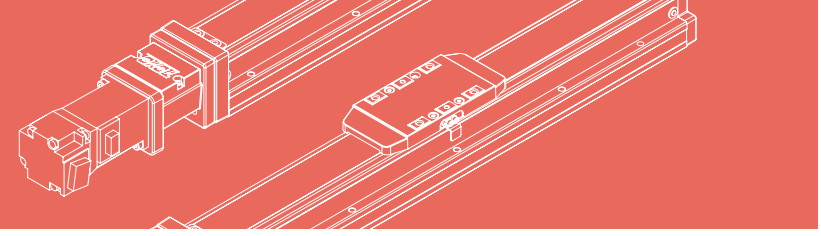
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke	50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12
N	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1	6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
Linear Speed mm/s Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
Linear Speed mm/s Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
Linear Speed mm/s Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

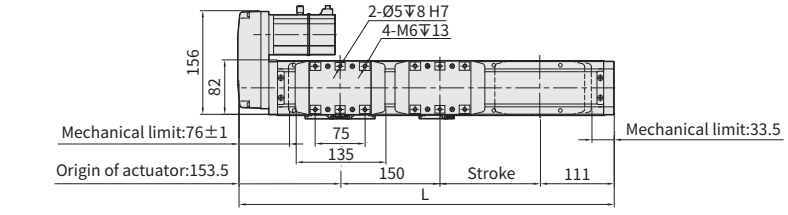
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

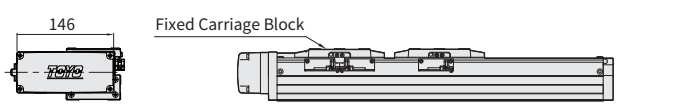


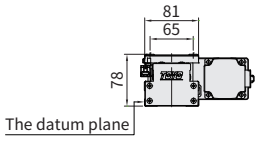
Unit : mm

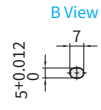
BR Motor Left Side

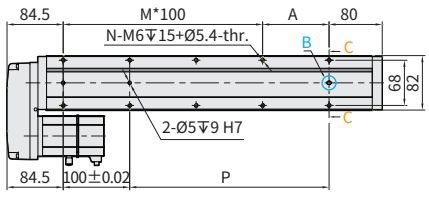
2D CAD 3D CAD Download CAD data at www.toyorobot.com

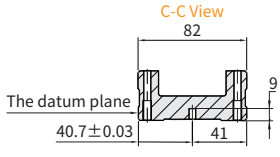












Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
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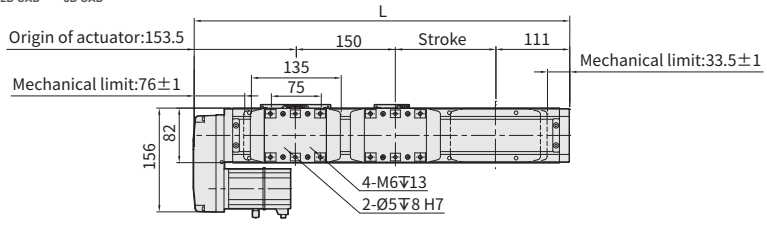
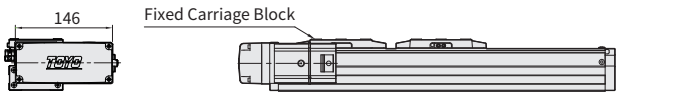
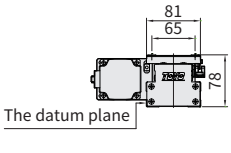
Unit : mm

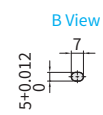
BL Motor Right Side

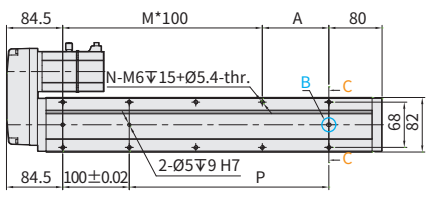
2D CAD 3D CAD Download CAD data at www.toyorobot.com

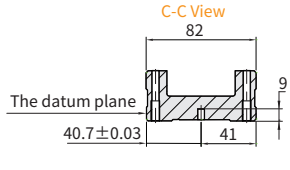












Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
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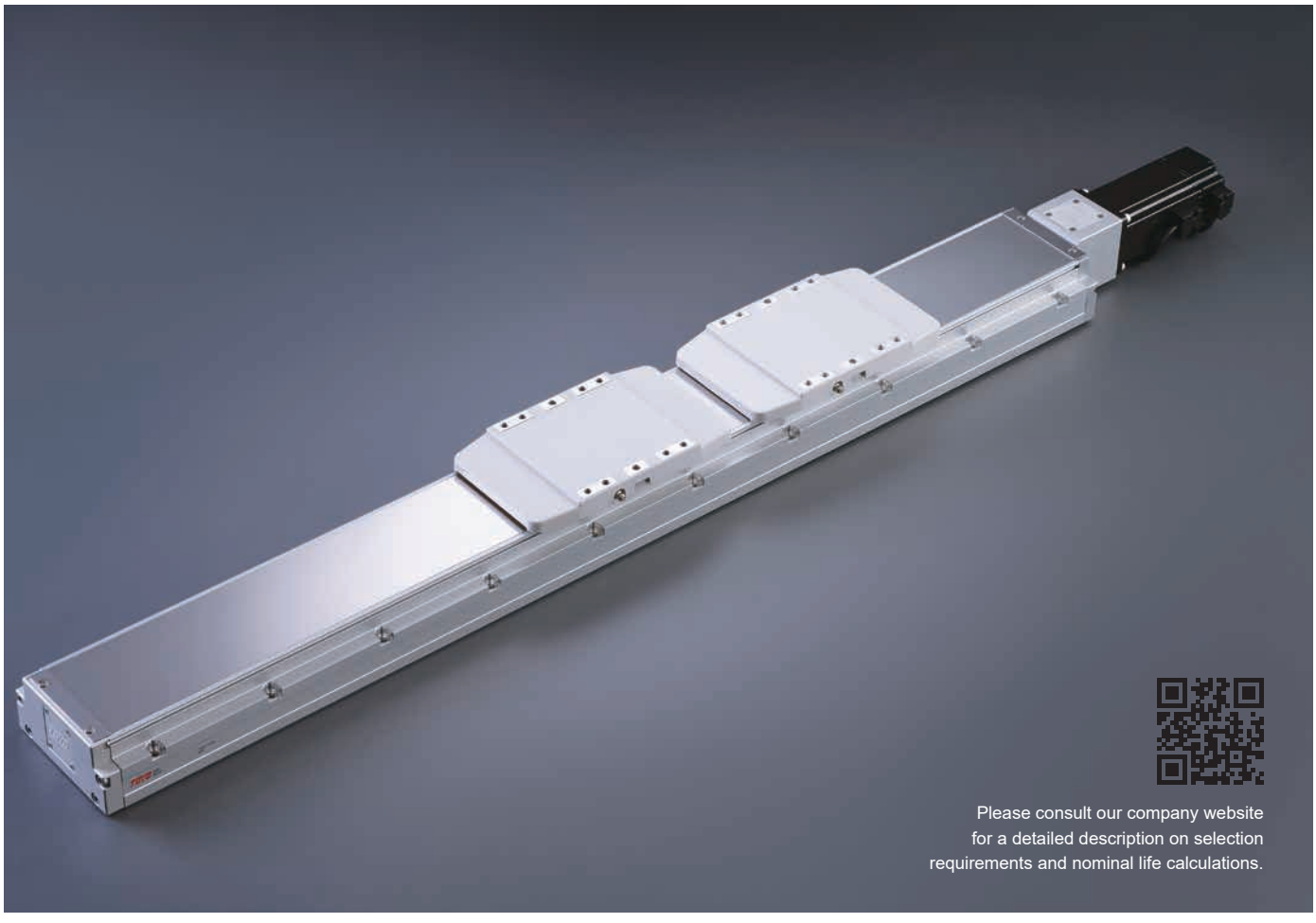
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	27	27	28
P		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
KG※1		6.56	6.86	7.19	7.51	7.86	8.15	8.48	8.92	9.22	9.63	9.92	10.16	10.47	10.88	11.13	11.55	11.79	12.21	12.63	13.05	13.47	13.89
Linear Speed mm/s	Lead 5	300									292	250	250	225	200	175	150	133	117	108	100	92	83
	Lead 10	600									583	500	500	450	400	350	300	267	233	217	200	183	167
	Lead 20	1200									1167	1000	1000	900	800	700	600	533	467	433	400	367	333

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH12D ▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH12D - L10 - 240 - BC - M40B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm
32	32mm

Stroke

Rolled Ballscrews
40-1040mm (50mm increments)
Ground Ballscrews
40-490mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
85M1270	85□ Shaft Ø12.7			
85M1400	85□ Shaft Ø14			
85M1270D	85□ Shaft Ø12.7 with a longer coupling			
85M1588D	85□ Shaft Ø15.88 with a longer coupling			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 40mm, the sensor installation has the following restrictions:

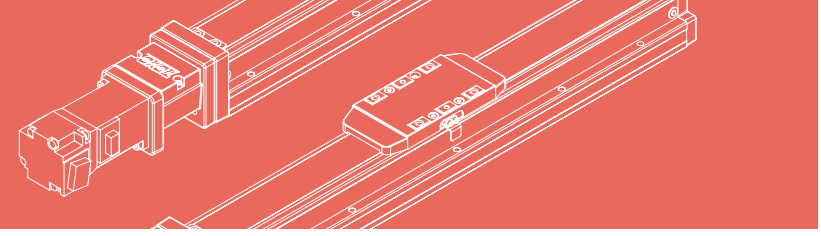
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.



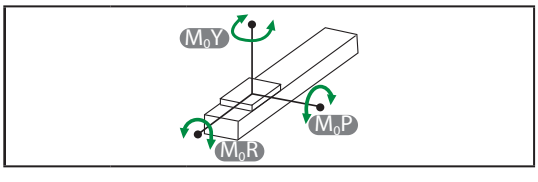
Specification

Item							
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews
		Repeatability		mm	±0.005		±0.003
		Stroke (increments)		mm	40-1040mm (50 increments)		40-490mm (50 increments)

Item								
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16			
		Lead		mm	5	10	20	32
		Maximum Rotating speed※1		rpm	3600	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200	1920
		Basic dynamic load rating Ca		N	11570	6300	4152	7326
		Basic static load rating Coa		N	23030	11596	7439	14157
		Load factor			1.2	1.35	1.35	1.75
	Linear Guide	Dynamic horizontal	100 Km of travel	N	89593			
			1000 Km of travel	N	41585			
			10000 Km of travel	N	19302			
		Static horizontal		N	154034			
	Fixed bearing	Basic dynamic load rating Cr		N	2600			
		Static load rating Cor		N	4750			
	Common Spec	Start torpue		N.cm	10			
		Allowable input torque		N.m	3.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Ambient temperature※2		°C	0~+40			

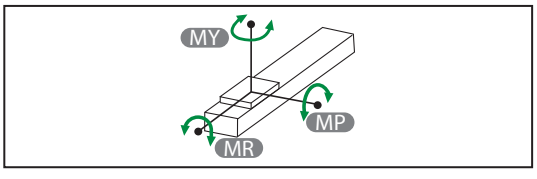
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



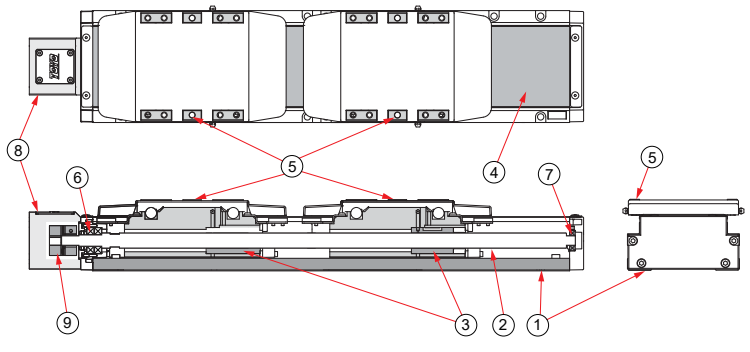
M_0Y	N.m	1898
M_0P	N.m	4043
M_0R	N.m	4043

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	2027.4	941	436.8
MP	N.m	2027.4	941	436.8
MR	N.m	1679.9	779.7	361.9

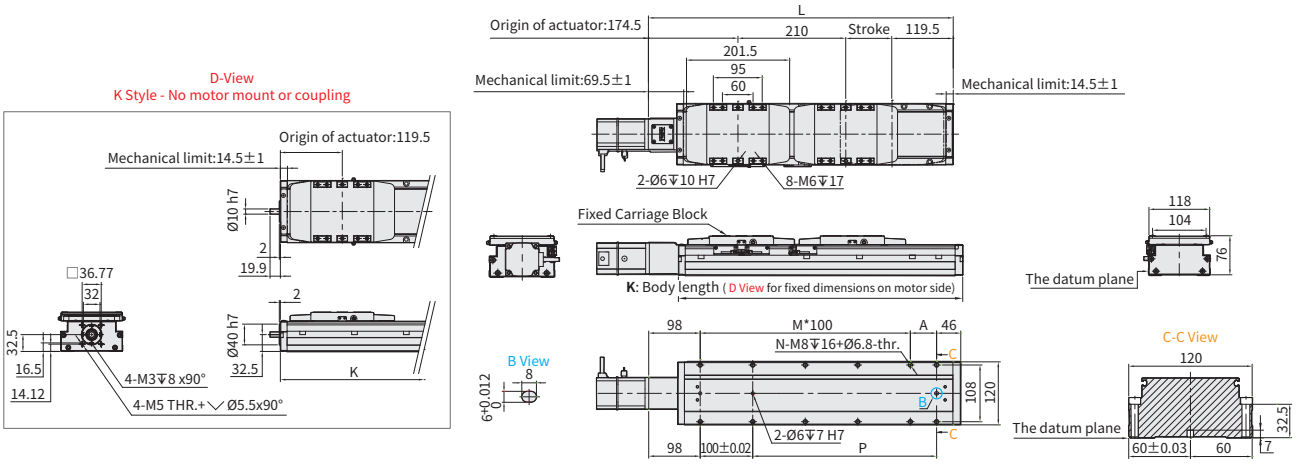
Parts list



No.	Part Description	Material
1	Base Extrusion	AL6463
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	AL6463
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

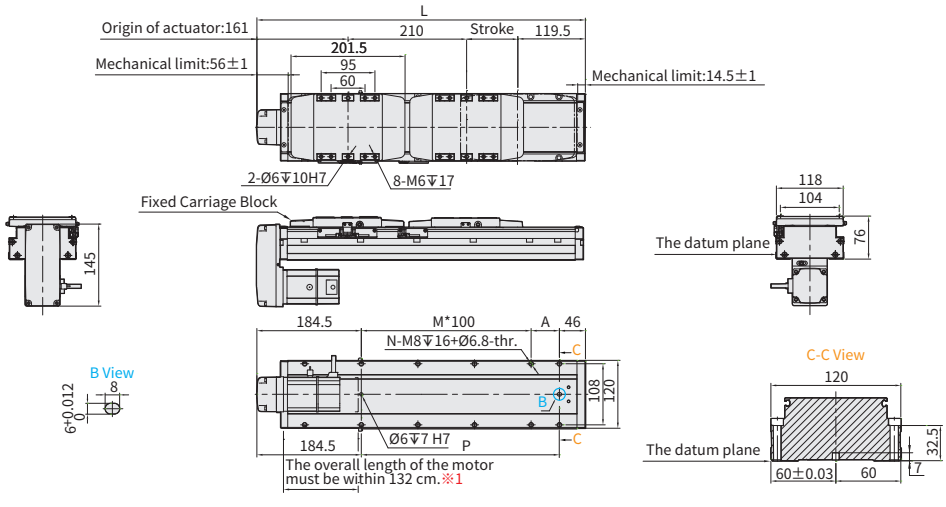


Stroke		40※2	90※2	140	190	240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040
Limit Stroke (±1)		48.5	98.5	148.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	798.5	848.5	898.5	948.5	998.5	1048.5
L		544	594	644	694	744	794	844	894	944	994	1044	1094	1144	1194	1244	1294	1344	1394	1444	1494	1544
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG※1		8.1	8.45	8.8	9.15	9.5	9.85	10.2	10.55	10.9	11.25	11.6	11.95	12.3	12.65	13	13.35	13.7	14.05	14.4	14.75	15.1
K		489	539	589	639	689	739	789	839	889	939	989	1039	1089	1139	1189	1239	1289	1339	1389	1439	1489
Linear Speed mm/s	Lead 5	300								250				225	200	175	167	158	142	133	125	117
	Lead 10	600								500				450	400	350	333	317	283	267	250	233
	Lead 20	1200								1000				900	800	700	667	633	567	533	500	467
	Lead 32	1920								1600				1440	1280	1120	1067	1013	907	853	800	747

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 40mm, 90mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

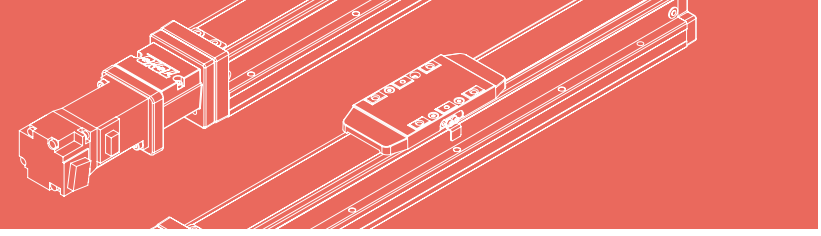
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		40※2	90※2	140	190	240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040
Limit Stroke (±1)		48.5	98.5	148.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	798.5	848.5	898.5	948.5	998.5	1048.5
L		530.5	580.5	630.5	680.5	730.5	780.5	830.5	880.5	930.5	980.5	1030.5	1080.5	1130.5	1180.5	1230.5	1280.5	1330.5	1380.5	1430.5	1480.5	1530.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
N		8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28
P		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		8.26	8.61	8.96	9.31	9.66	10.01	10.36	10.71	11.06	11.41	11.76	12.11	12.46	12.81	13.16	13.51	13.86	14.21	14.56	14.91	15.26
Linear Speed mm/s	Lead 5	300								250				225	200	175	167	158	142	133	125	117
	Lead 10	600								500				450	400	350	333	317	283	267	250	233
	Lead 20	1200								1000				900	800	700	667	633	567	533	500	467
	Lead 32	1920								1600				1440	1280	1120	1067	1013	907	853	800	747

※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 40mm, 90mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

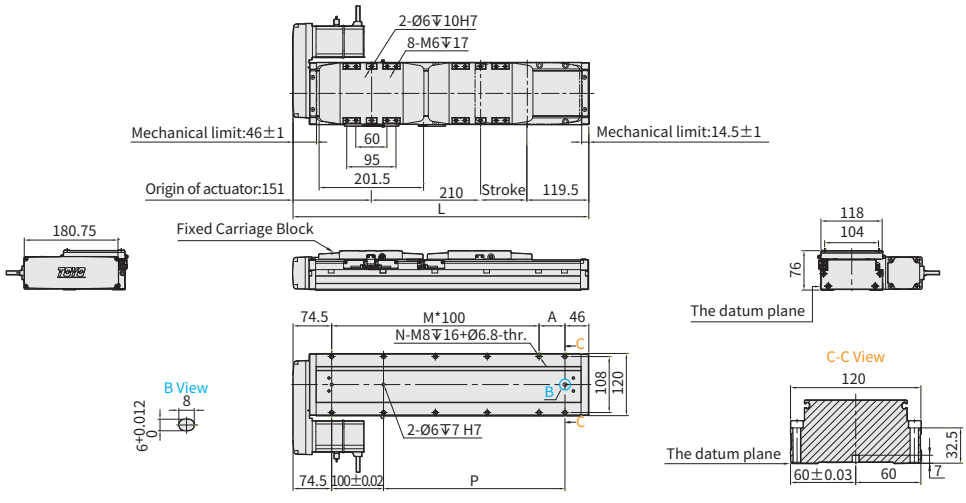


BR Motor Left Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



Stroke		40※2	90※2	140	190	240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040
Limit Stroke (±1)		48.5	98.5	148.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	798.5	848.5	898.5	948.5	998.5	1048.5
L		520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		8.3	8.65	9	9.35	9.7	10.05	10.4	10.75	11.1	11.45	11.8	12.5	12.85	13.2	13.55	13.9	14.25	14.21	14.56	14.91	15.26
Linear Speed mm/s	Lead 5	300								250				225	200	175	167	158	142	133	125	117
	Lead 10	600								500				450	400	350	333	317	283	267	250	233
	Lead 20	1200								1000				900	800	700	667	633	567	533	500	467
	Lead 32	1920								1600				1440	1280	1120	1067	1013	907	853	800	747

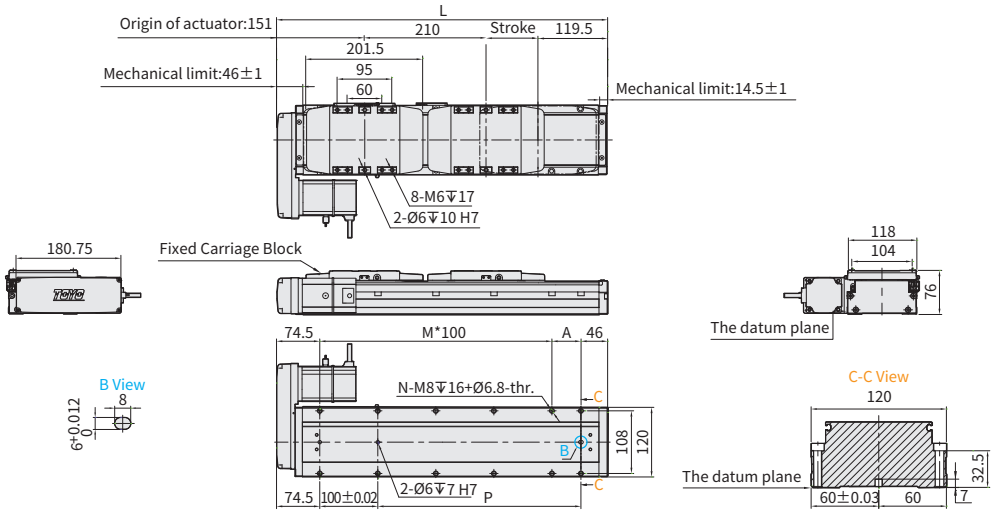
※2 When the stroke is 40mm, 90mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

BL Motor Right Side

2D CAD 3D CAD

Download CAD data at www.toyorobot.com

Unit : mm



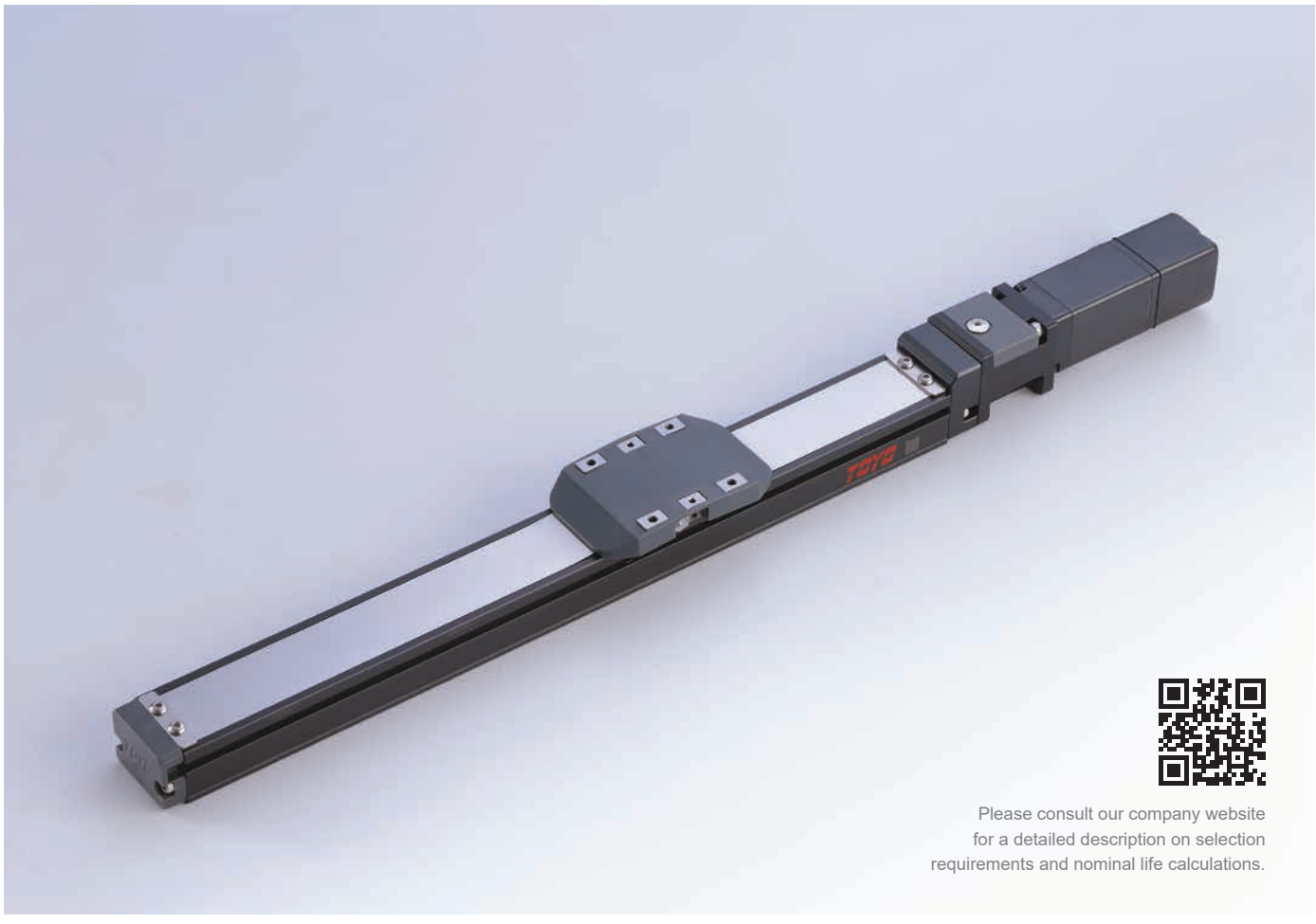
Stroke		40※2	90※2	140	190	240	290	340	390	440	490	540	590	640	690	740	790	840	890	940	990	1040
Limit Stroke (±1)		48.5	98.5	148.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	798.5	848.5	898.5	948.5	998.5	1048.5
L		520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
A		100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
N		10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
P		300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KG		8.3	8.65	9	9.35	9.7	10.05	10.4	10.75	11.1	11.45	11.8	12.5	12.85	13.2	13.55	13.9	14.25	14.21	14.56	14.91	15.26
Linear Speed mm/s	Lead 5	300								250				225	200	175	167	158	142	133	125	117
	Lead 10	600								500				450	400	350	333	317	283	267	250	233
	Lead 20	1200								1000				900	800	700	667	633	567	533	500	467
	Lead 32	1920								1600				1440	1280	1120	1067	1013	907	853	800	747

※2 When the stroke is 40mm, 90mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.
※3 The dual-carriage design does not feature an internal synchronous mechanism; the customer can select an external connection to best-fit application requirements.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH3K

▶ Integrated Linear Bearing ▶ Ball Screw Drive



Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH3K - L2 - 100 - BC - M03B - C4 - 0001

Model

Special Order No.

Stroke

50-300mm
50mm increments

Ball Screw Lead

2	2mm
8	8mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	03	30W	B*3
Y	Yaskawa			
25M500	25□ Shaft Ø5			
25M500A	25□ Shaft Ø5 *2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling*4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

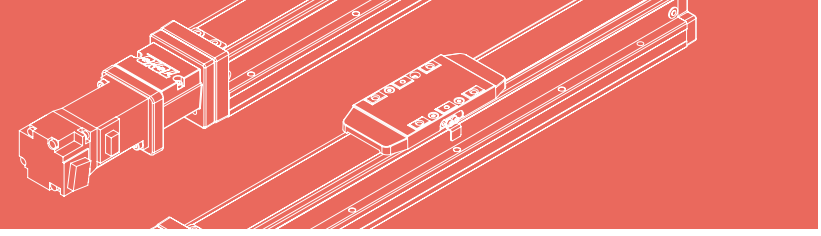
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

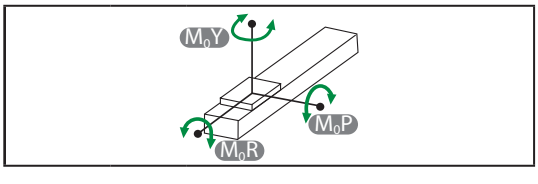


Specification

Item						
	Ball screw	Outer dia. & Precision grade		mm	Ø6 & C7 Rolled Ballscrews	
		Lead		mm	2	8
		Maximum Rotating speed※1		rpm	3000	3600
		Maximum linear speed※1		mm/s	100	480
		Basic dynamic load rating Ca		N	1811	862
		Basic static load rating Coa		N	2774	1099
		Load factor			1.2	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	3144	
			1000 Km of travel	N	1459	
			10000 Km of travel	N	677	
		Static horizontal		N	6707	
	Fixed bearing	Basic dynamic load rating Cr		N	1470	
		Static load rating Cor		N	535	
	Common Spec	Repeatability		mm	±0.005	
		Start torpue		N.cm	2	
		Allowable input torque		N.m	1.1	
		Maximum acceleration		m/s^2	10	
		Friction coefficient			0.03	
		Stroke (increments)		mm	50-300 (50 increments)	
		Ambient temperature※2		°C	0~+40	

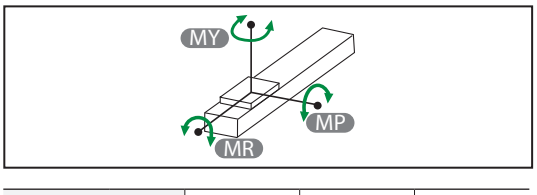
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



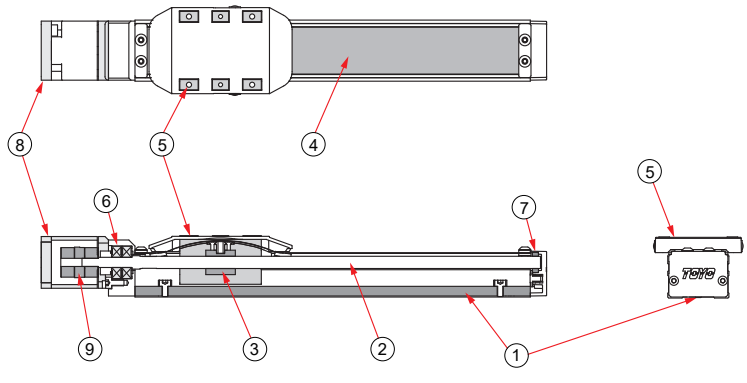
M_0Y	N.m	39
M_0P	N.m	39
M_0R	N.m	44

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	9.6	4.5	2.1
MP	N.m	9.6	4.5	2.1
MR	N.m	10.8	5	2.3

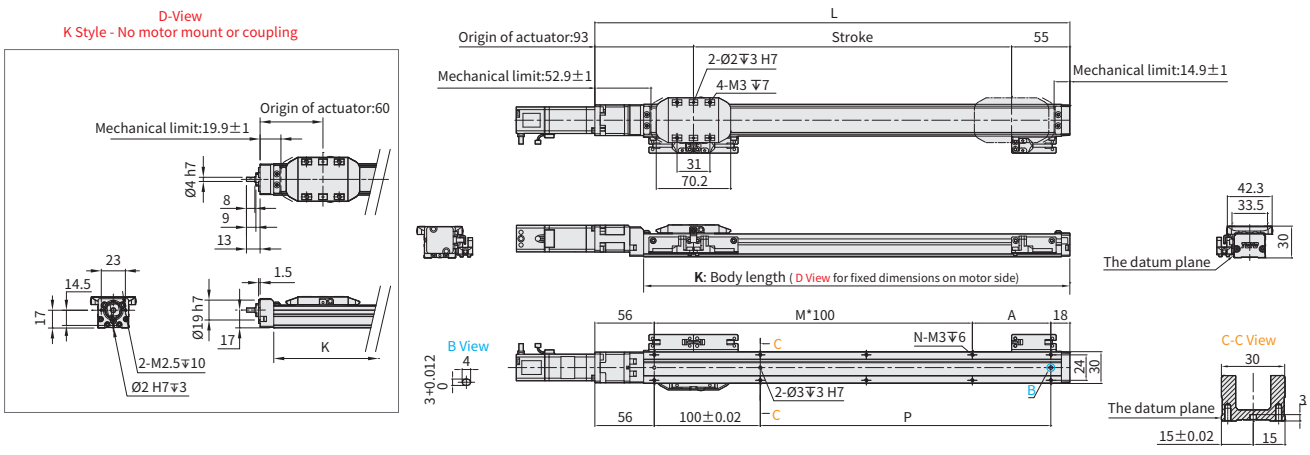
Parts list



No.	Part Description	Material
1	Base Extrusion	S45C
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

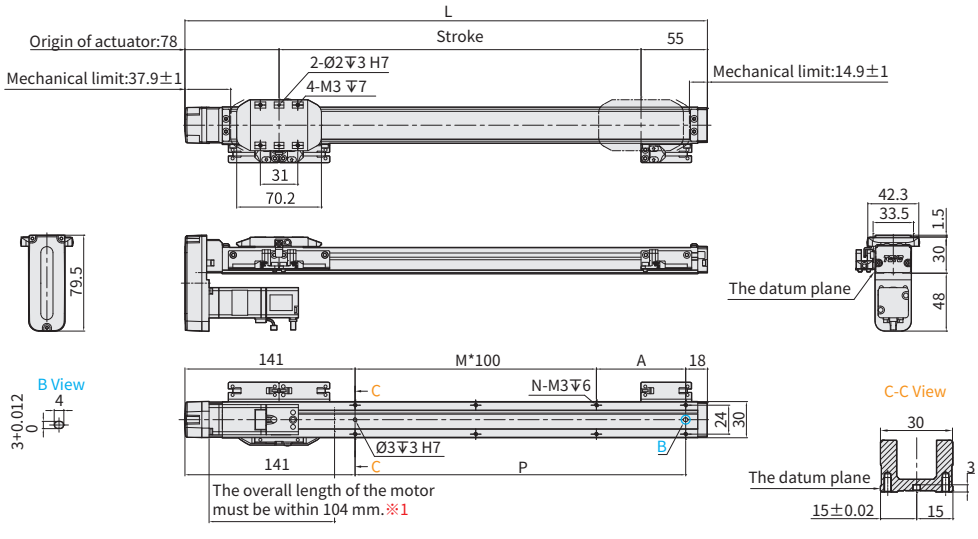


Stroke		50	100	150	200	250	300
Limit Stroke (±1)		60	110	160	210	260	310
L		198	248	298	348	398	448
A		24	74	24	74	24	74
M		1	1	2	2	3	3
N		6	6	8	8	10	10
P		24	74	124	174	224	274
KG※1		0.76	0.95	1.13	1.32	1.5	1.68
K		165	215	265	315	365	415
Linear Speed mm/s	Lead 2	100				90	80
	Lead 8	480				400	320

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.

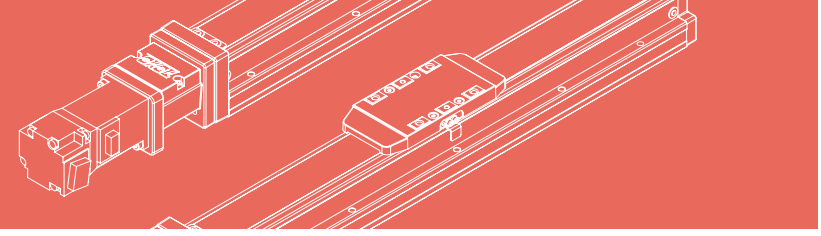
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50	100	150	200	250	300
Limit Stroke (±1)		60	110	160	210	260	310
L		183	233	283	333	383	433
A		24	74	24	74	24	74
M		0	0	1	1	2	2
N		4	4	6	6	8	8
P		24	74	124	174	224	274
KG※1		0.67	0.83	0.99	1.14	1.31	1.46
Linear Speed mm/s	Lead 2	100				90	80
	Lead 8	480				400	320

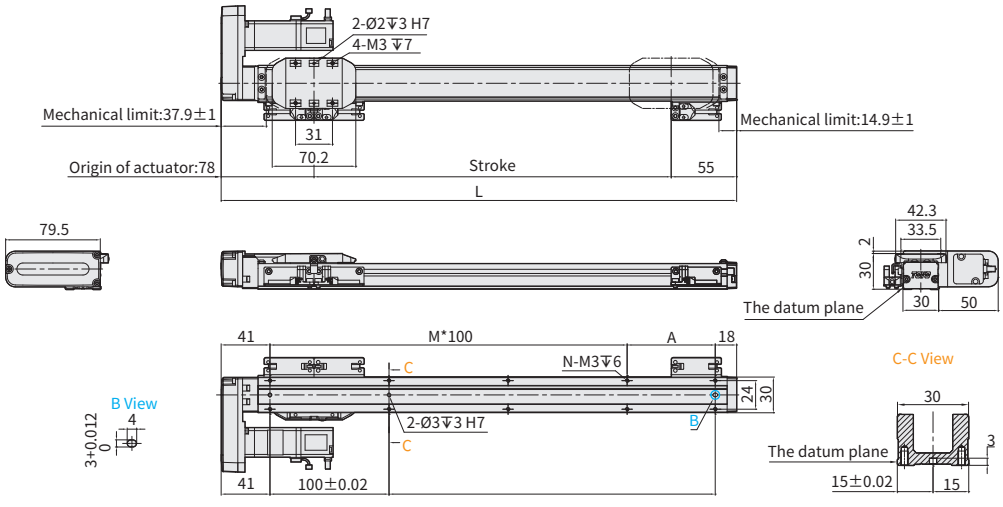
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.



BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm

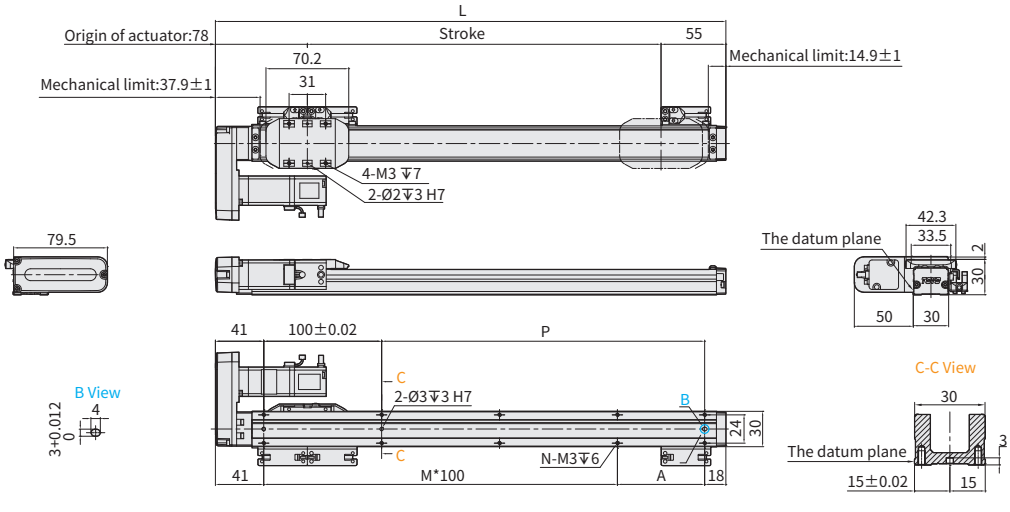


Stroke		50	100	150	200	250	300
Limit Stroke (±1)		60	110	160	210	260	310
L		183	233	283	333	383	433
A		24	74	24	74	24	74
M		1	1	2	2	3	3
N		6	6	8	8	10	10
P		24	74	124	174	224	274
KG※1		0.67	0.83	0.99	1.14	1.31	1.46
Linear Speed mm/s	Lead 2	100				90	80
	Lead 8	480				400	320

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm



Stroke		50	100	150	200	250	300
Limit Stroke (±1)		60	110	160	210	260	310
L		198	248	298	348	398	448
A		24	74	24	74	24	74
M		1	1	2	2	3	3
N		6	6	8	8	10	10
P		24	74	124	174	224	274
KG※1		0.67	0.83	0.99	1.14	1.31	1.46
Linear Speed mm/s	Lead 2	100				90	80
	Lead 8	480				400	320

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH4K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4K - L2 - 100 - BC - M05B - C4 - 0001

Model

Stroke

50-800mm
50mm increments

Special Order No.

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	50W	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5*2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

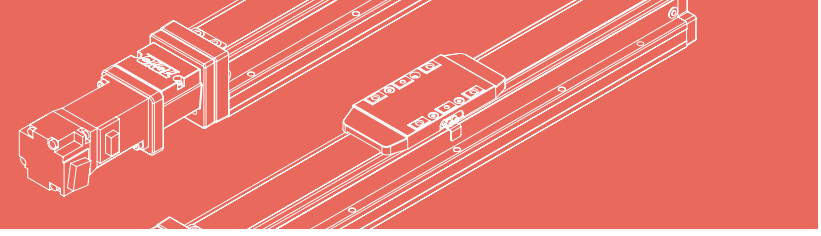
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

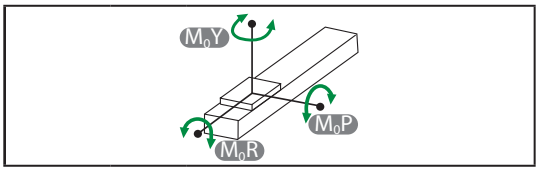


Specification

Item							
	Ball screw	Outer dia. & Precision grade		mm	Ø10 & C7 Rolled Ballscrews		
		Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	4835		
			1000 Km of travel	N	2246		
			10000 Km of travel	N	1040		
		Static horizontal		N	12678		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-800 (50 increments)		
		Ambient temperature※2		°C	0~+40		

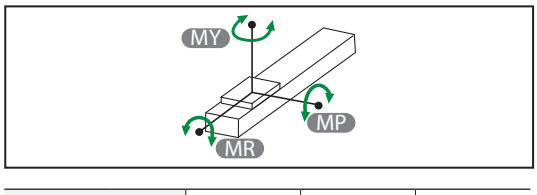
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



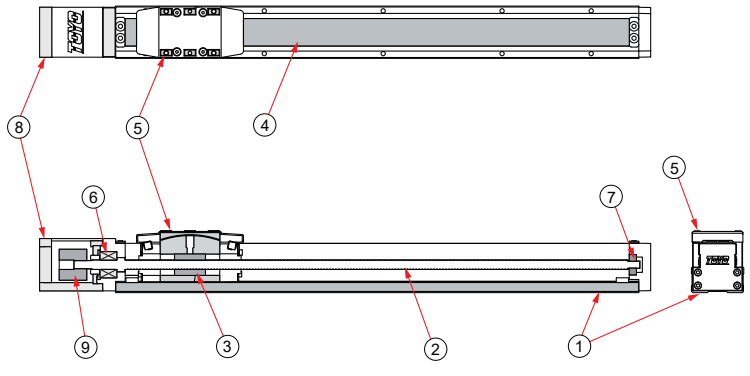
M_0Y	N.m	79
M_0P	N.m	79
M_0R	N.m	116

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



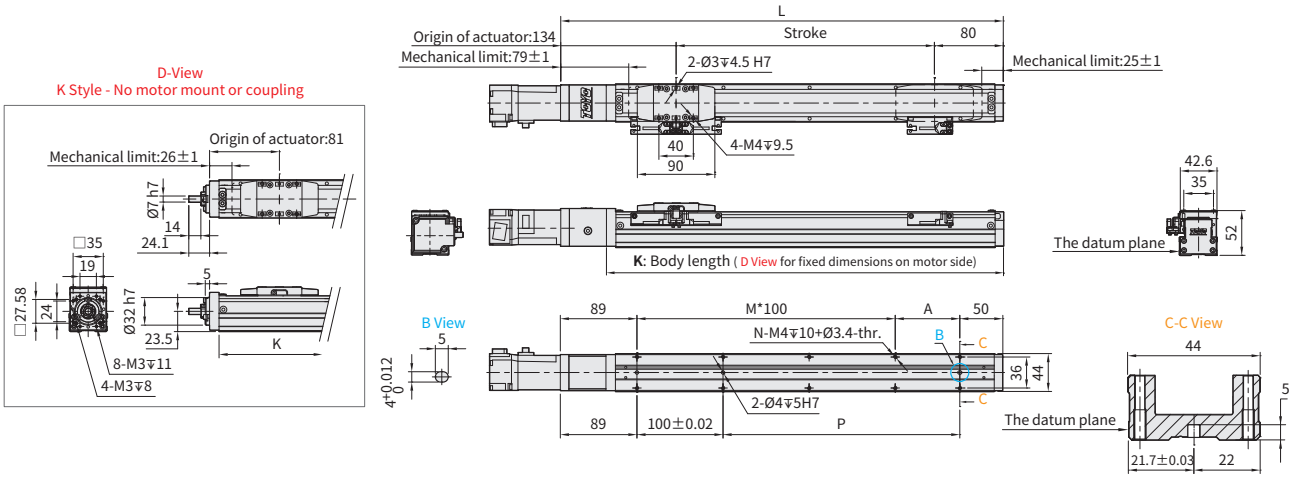
No.	Part Description	Material
1	Base Extrusion	S45C
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH4K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

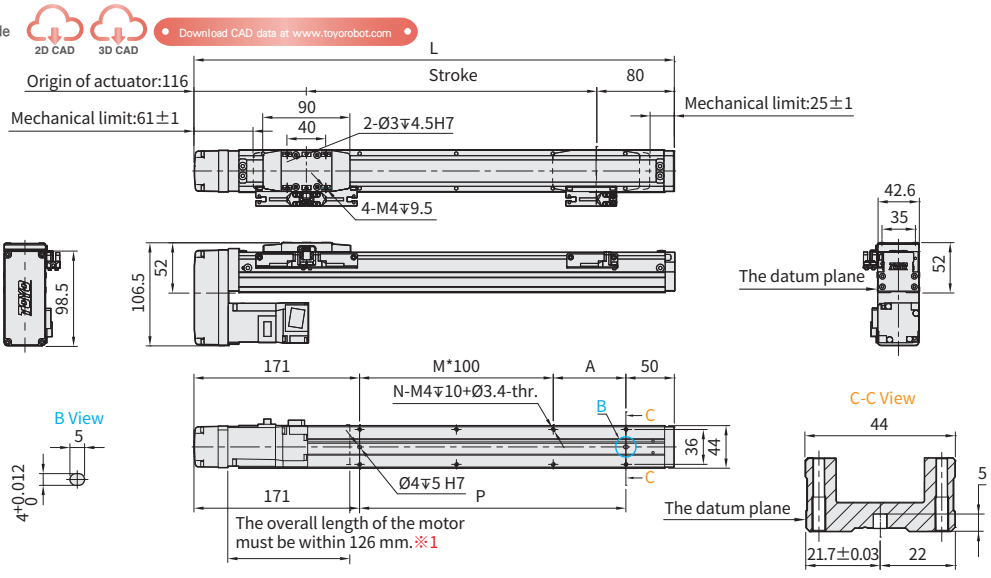


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG※1		2.43	2.64	2.86	3.07	3.28	3.50	3.71	3.93	4.14	4.36	4.57	4.79	5.00	5.22	5.43	5.65
K		211	261	311	361	411	461	511	561	611	661	711	761	811	861	911	961
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

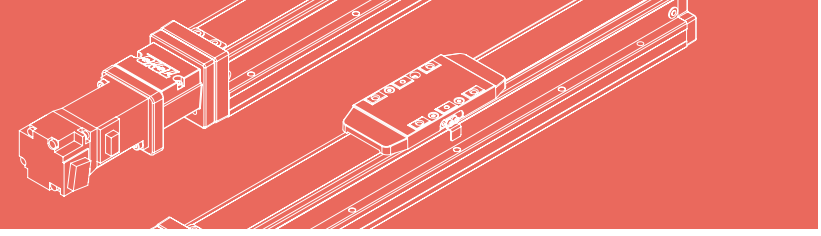
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

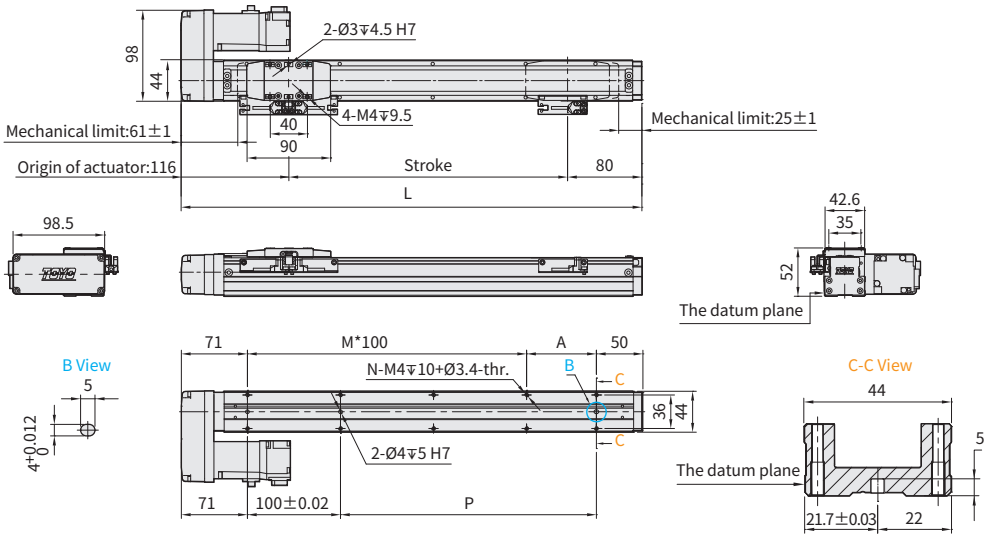
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



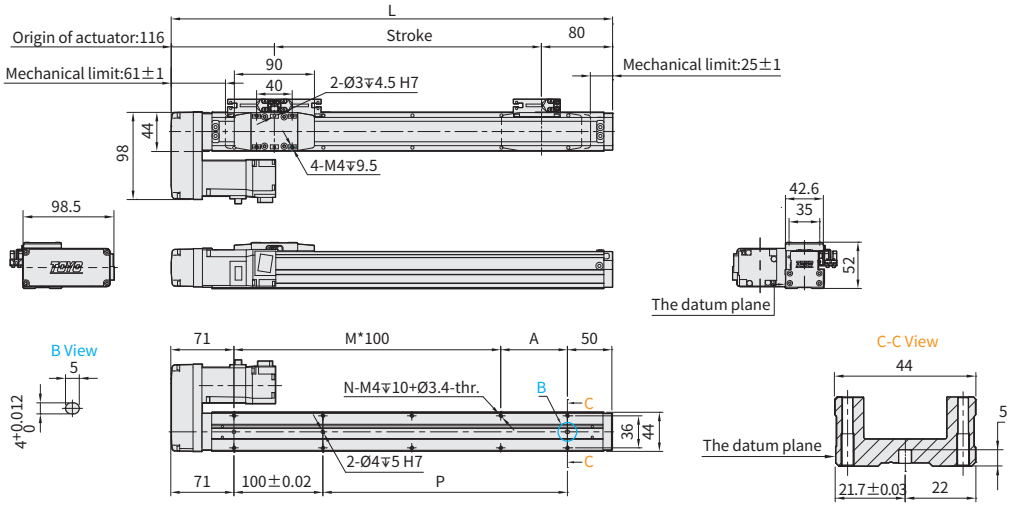
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH4K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH4K - L2 - 100 - BC - M10B - C4 - 0001

Model

Stroke

50-800mm
50mm increments

Special Order No.

Ball Screw Lead

2	2mm
6	6mm
12	12mm

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
35M500	35□ Shaft Ø5			
35M500A	35□ Shaft Ø5*2			
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5*2			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

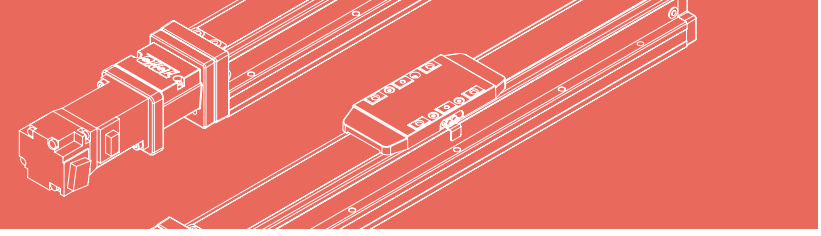
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

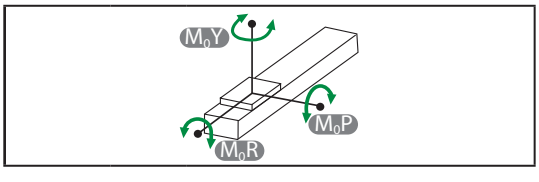


Specification

Item				mm	Ø10 & C7 Rolled Ballscrews		
	Ball screw	Lead		mm	2	6	12
		Maximum Rotating speed※1		rpm	3000	3600	3600
		Maximum linear speed※1		mm/s	100	360	720
		Basic dynamic load rating Ca		N	2265	2537	1740
		Basic static load rating Coa		N	4839	4569	3052
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	4835		
			1000 Km of travel	N	2246		
			10000 Km of travel	N	1040		
		Static horizontal		N	12678		
	Fixed bearing	Basic dynamic load rating Cr		N	1730		
		Static load rating Cor		N	3800		
	Common Spec	Repeatability		mm	±0.005		
		Start torpue		N.cm	2		
		Allowable input torque		N.m	1.1		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Stroke (increments)		mm	50-800 (50 increments)		
		Ambient temperature※2		°C	0~+40		

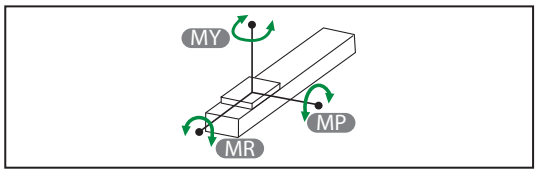
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



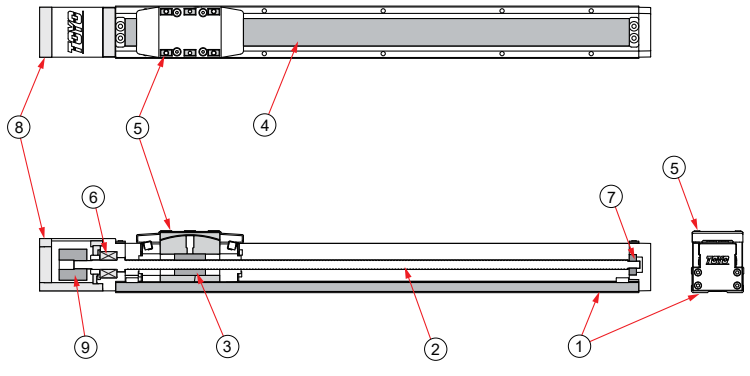
M_0Y	N.m	79
M_0P	N.m	79
M_0R	N.m	116

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	24.9	11.6	5.4
MP	N.m	24.9	11.6	5.4
MR	N.m	37.5	17.4	8.1

Parts list



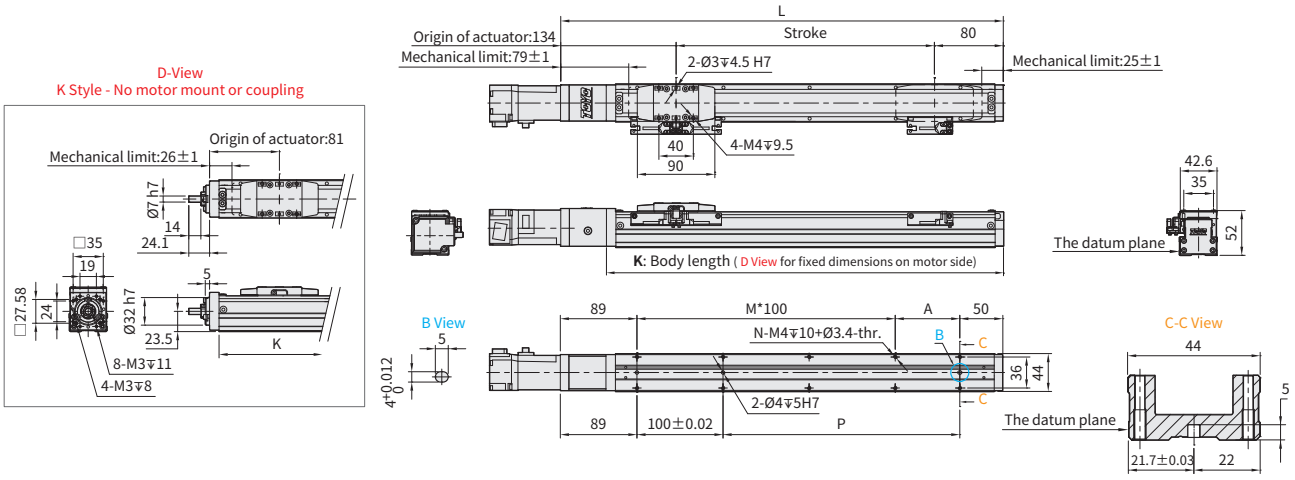
No.	Part Description	Material
1	Base Extrusion	S45C
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH4K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

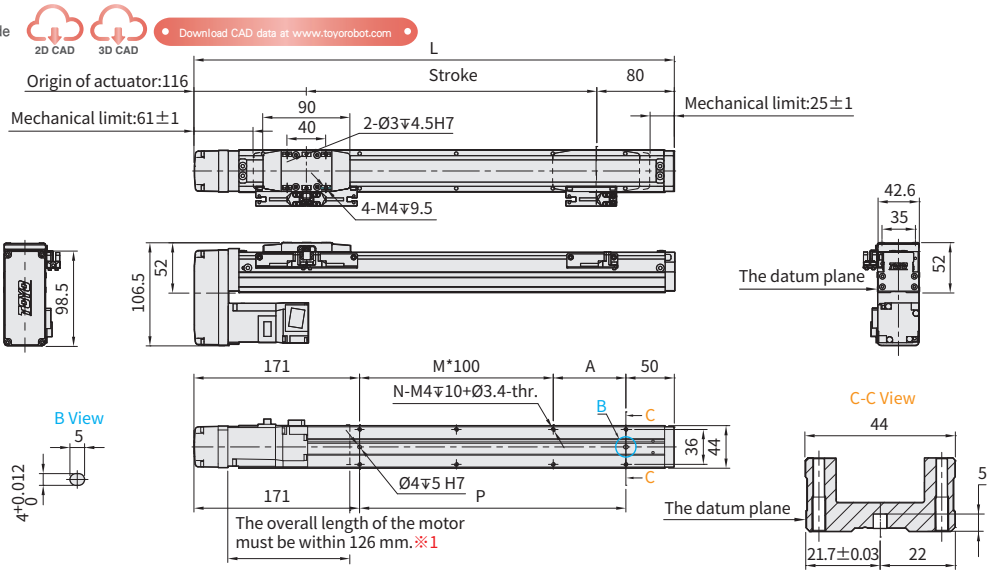


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG※1		2.43	2.64	2.86	3.07	3.28	3.50	3.71	3.93	4.14	4.36	4.57	4.79	5.00	5.22	5.43	5.65
K		211	261	311	361	411	461	511	561	611	661	711	761	811	861	911	961
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

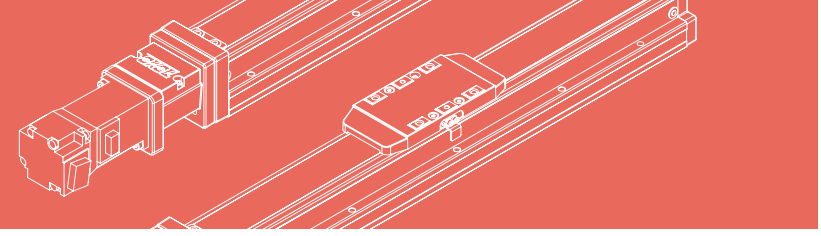
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

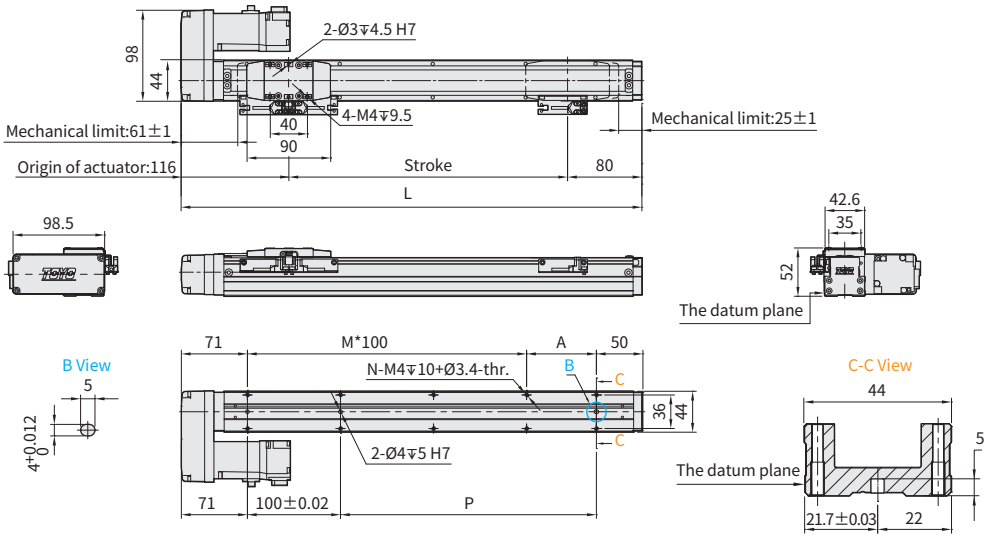
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



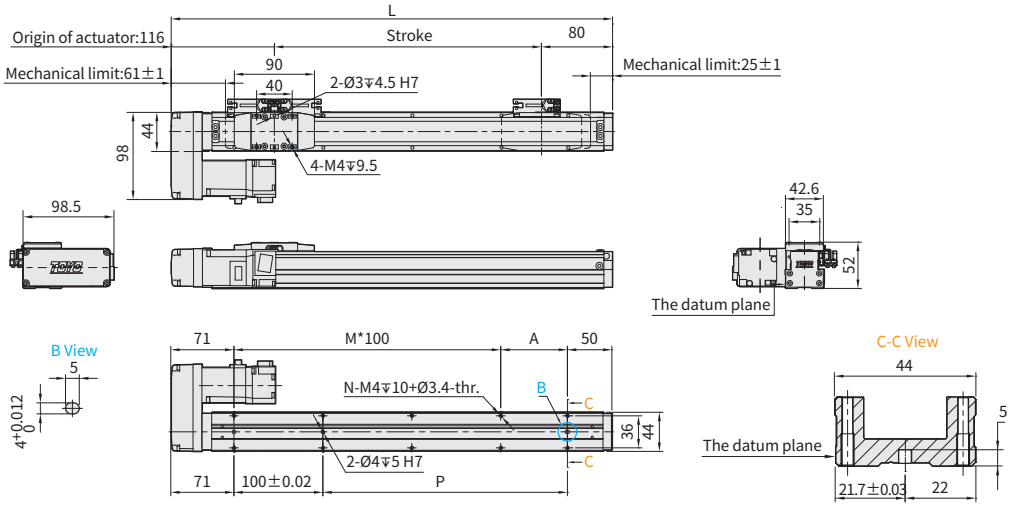
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		2.54	2.75	2.97	3.18	3.39	3.61	3.82	4.04	4.25	4.47	4.68	4.90	5.11	5.33	5.54	5.76
Linear Speed mm/s	Lead 2	100											90	80	70	60	50
	Lead 6	360									330	320	270	240	210	180	150
	Lead 12	720									660	640	540	480	420	360	300

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH5K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH5K - L 5 - 100 - BC - M10B - C4 - 0001

Model

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

2	2mm
5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews	
50-800mm (50mm increments)	
Ground Ballscrews	
50-300mm (50mm increments)	

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *4	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B *3
P	Panasonic	10	100W	
Y	Yaskawa	20	-	
T	Delta	40	-	
42M500	42□ Shaft Ø5			
42M500A	42□ Shaft Ø5 *2			
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *4			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 Please refer to description on page 445.

*3 If No Brake,No Description.

*4 When K is selected the motor position section is left blank.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

*When the stroke is 50mm, the sensor installation has the following restrictions:

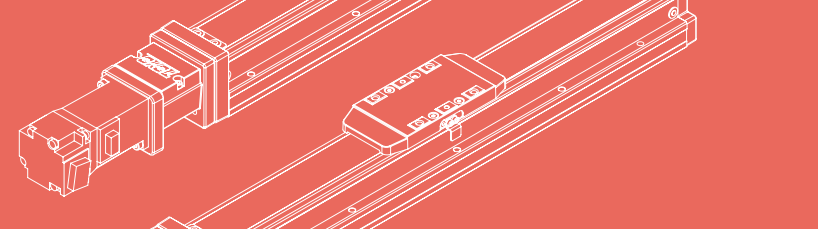
1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor

Special Order No.



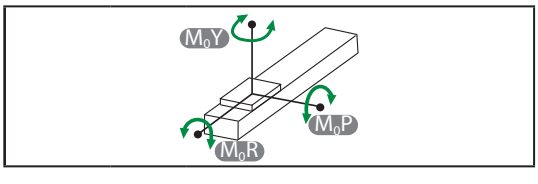
Specification

Item							
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L		C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews		C5 Ground Ballscrews
		Repeatability		mm	±0.005		±0.003
		Stroke (increments)		mm	50-800mm (50 increments)		50-300mm (50 increments)

Item								
Item	Ball screw	Outer dia. & Precision grade		mm	ø12 & C7 Rolled Ballscrews			
		Lead		mm	2	5	10	20
		Maximum Rotating speed※1		rpm	3000	3600	3600	3600
		Maximum linear speed※1		mm/s	100	300	600	1200
		Basic dynamic load rating Ca		N	2411	4829	4680	11284
		Basic static load rating Coa		N	5779	7836	7649	20410
		Load factor			1.2	1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	5904			
			1000 Km of travel	N	2736			
			10000 Km of travel	N	1275			
		Static horizontal		N	16904			
	Fixed bearing	Basic dynamic load rating Cr		N	1730			
		Static load rating Cor		N	3800			
	Common Spec	Start torpue		N.cm	7			
		Allowable input torque		N.m	1.1			
		Maximum acceleration		m/s^2	10			
		Friction coefficient			0.03			
		Ambient temperature※2		°C	0~+40			

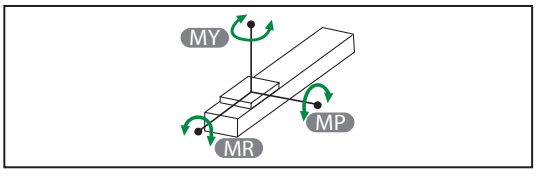
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



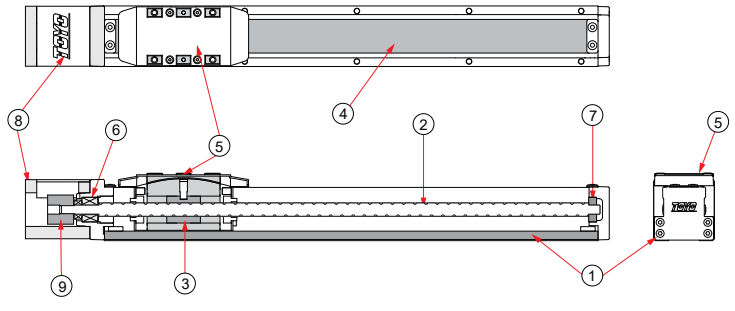
M_0Y	N.m	103
M_0P	N.m	103
M_0R	N.m	144

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	40.8	18.9	8.8
MP	N.m	40.8	18.9	8.8
MR	N.m	58.8	27.2	12.6

Parts list



No.	Part Description	Material
1	Base Extrusion	S45C
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

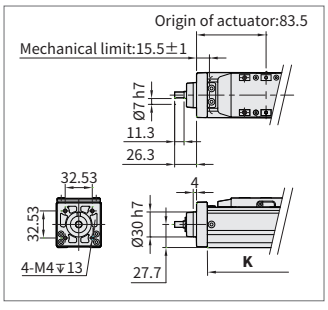
GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

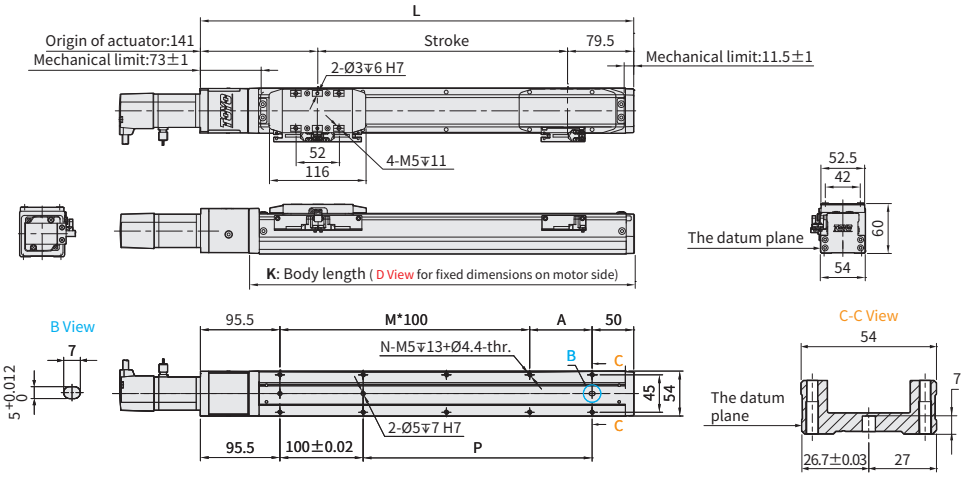
GTH5K ▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

D-View
K Style - No motor mount or coupling



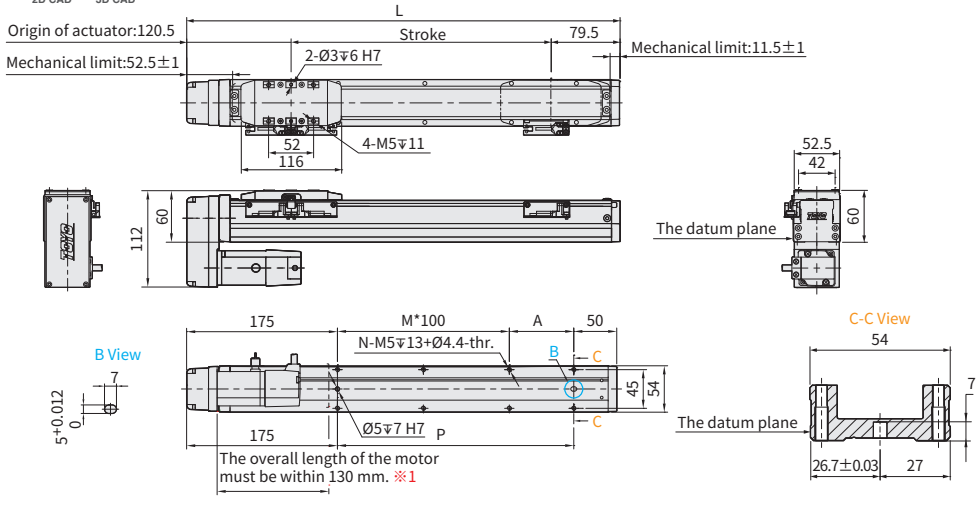


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG※1		3.01	3.27	3.52	3.78	4.03	4.29	4.55	4.80	5.06	5.32	5.57	5.83	6.08	6.34	6.60	6.85
K		213	263	313	363	413	463	513	563	613	663	713	763	813	863	913	963
Linear Speed mm/s	Lead 2	100												90	80	70	60
	Lead 5	300										292	250	225	200	175	150
	Lead 10	600										583	500	450	400	350	300
	Lead 20	1200										1167	1000	900	800	700	600

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

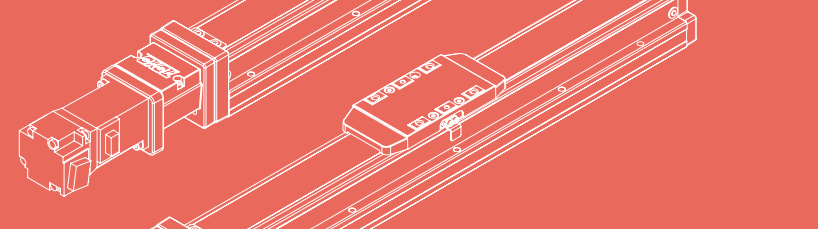
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		3.04	3.30	3.55	3.81	4.06	4.32	4.58	4.83	5.09	5.35	5.60	5.86	6.11	6.37	6.63	6.88
Linear Speed mm/s	Lead 2	100												90	80	70	60
	Lead 5	300										292	250	225	200	175	150
	Lead 10	600										583	500	450	400	350	300
	Lead 20	1200										1167	1000	900	800	700	600

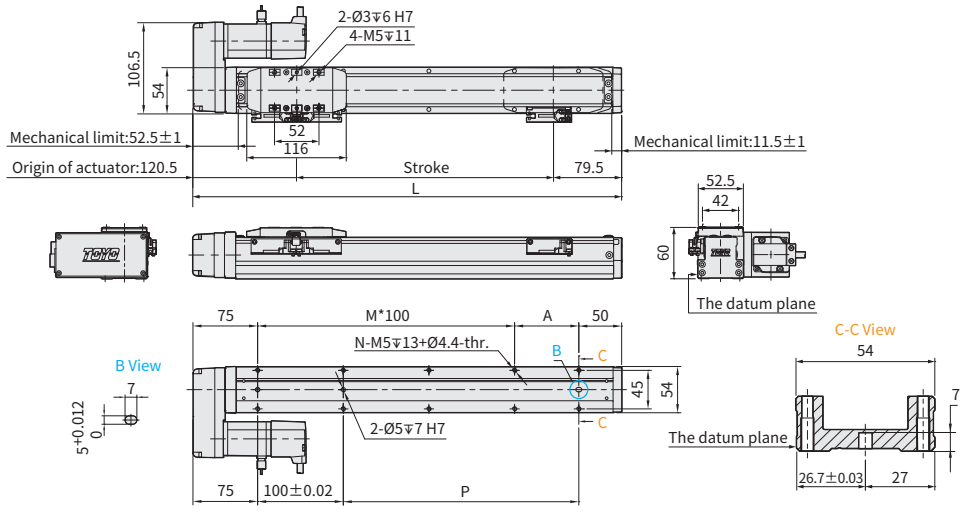
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



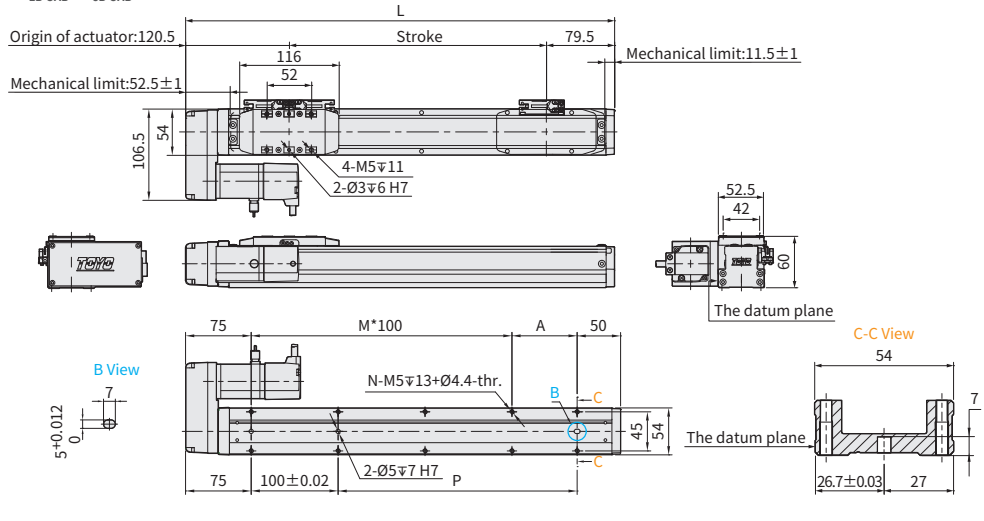
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		3.04	3.30	3.55	3.81	4.06	4.32	4.58	4.83	5.09	5.35	5.60	5.86	6.11	6.37	6.63	6.88
Linear Speed mm/s	Lead 2	100												90	80	70	60
	Lead 5	300										292	250	225	200	175	150
	Lead 10	600										583	500	450	400	350	300
	Lead 20	1200										1167	1000	900	800	700	600

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
L		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG		3.04	3.30	3.55	3.81	4.06	4.32	4.58	4.83	5.09	5.35	5.60	5.86	6.11	6.37	6.63	6.88
Linear Speed mm/s	Lead 2	100												90	80	70	60
	Lead 5	300										292	250	225	200	175	150
	Lead 10	600										583	500	450	400	350	300
	Lead 20	1200										1167	1000	900	800	700	600

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series

- GTH3
- GTH4
- GTH5
- GTH8
- GTH12
- GTH12M
- GTH5S
- GTH8S
- GTH4D
- GTH5D
- GTH8D
- GTH12D
- GTH3K
- GTH4K
- GTH5K
- GTH8K

GTH8K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8K - L10 - 100 - BC - M20B - C4 - 0001

Model

Special Order No.

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews
50-1100mm (50mm increments)
Ground Ballscrews
50-700mm (50mm increments)

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
- *2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B *3
P	Panasonic	10	-	
Y	Yaskawa	20	200W	
T	Delta	40	-	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

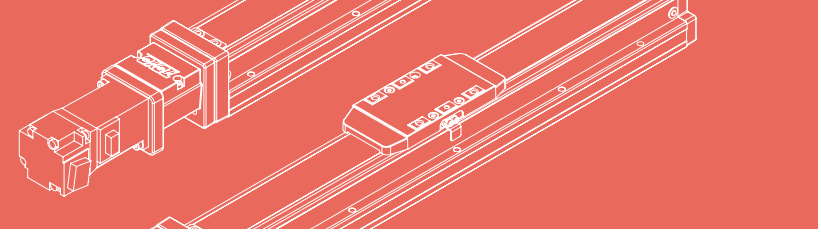
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor



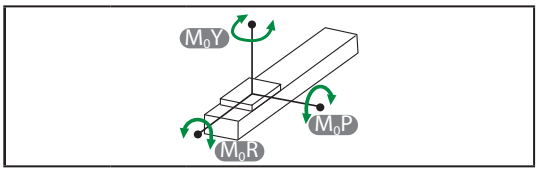
Specification

Item						
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1100mm (50 increments)	50-700mm (50 increments)

Item							
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16 & C7 Rolled Ballscrews		
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620		
			1000 Km of travel	N	8643		
			10000 Km of travel	N	4012		
		Static horizontal		N	34230		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

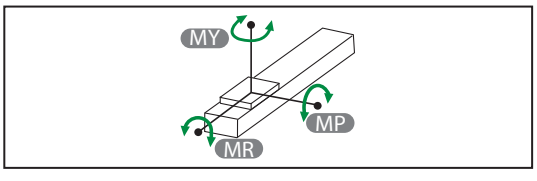
※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

Static Loading Moment



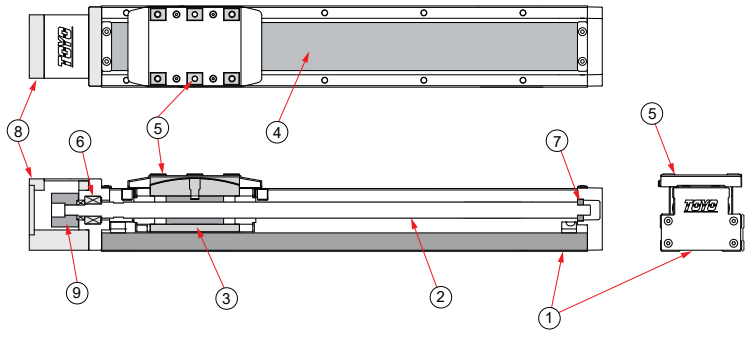
M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
MY	N.m	121.6	56.5	26.2
MP	N.m	121.6	56.5	26.2
MR	N.m	201.9	93.7	43.5

Parts list



No.	Part Description	Material
1	Base Extrusion	S45C
2	Ball Screw	S45C
3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
6	Ball Bearing Dual Arrangement	SUJ2
7	Ball Bearing	SUJ2
8	Fixed Support Block-Inline Motor Mounting Bracket	AL6061
9	Coupling- Clamping	AL6061

GTH Series
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GTH12M
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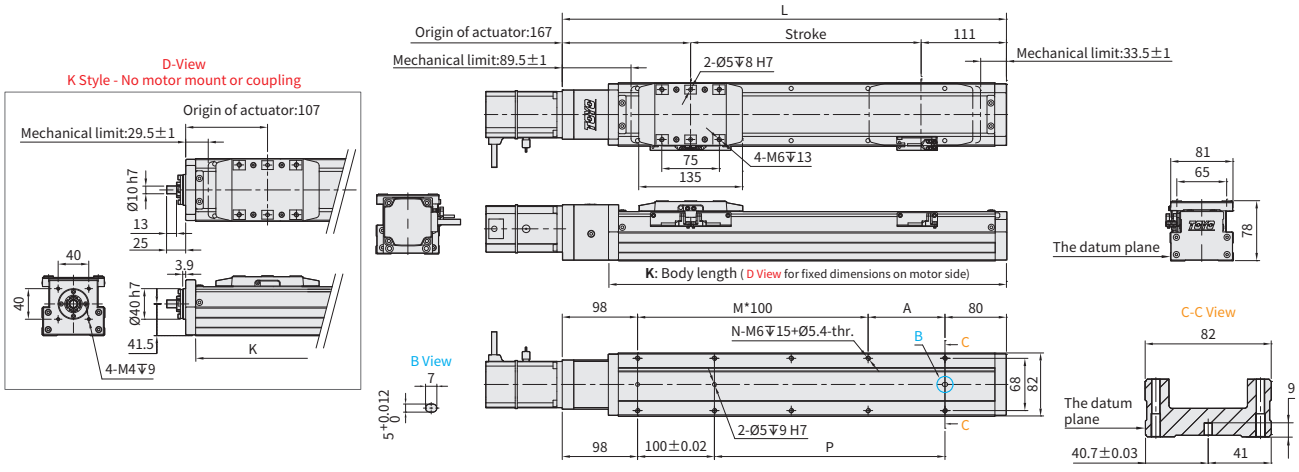
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH8K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com

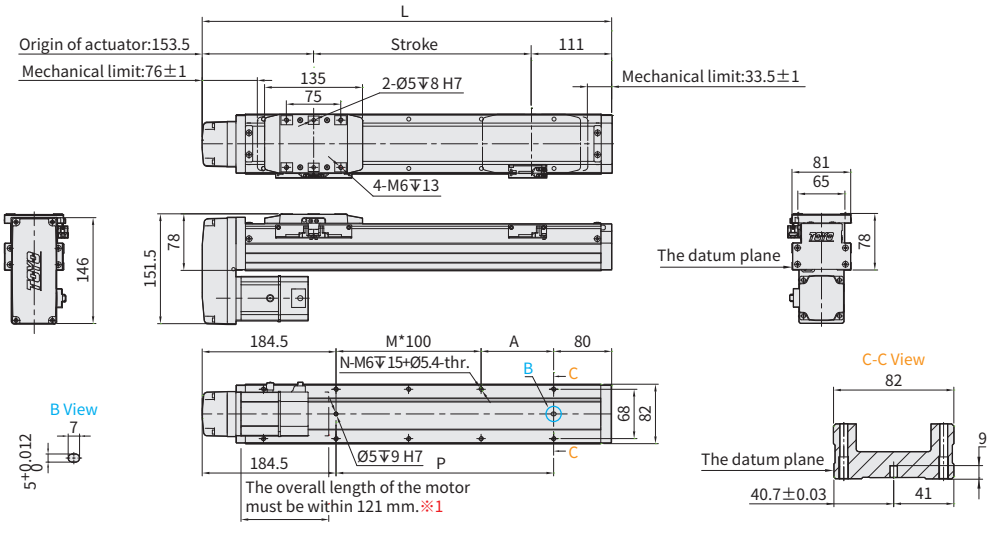


Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		328	378	428	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.62	7.31	7.99	8.68	9.37	10.05	10.74	11.42	12.11	12.79	13.48	14.16	14.85	15.54	16.22	16.91	17.59	18.28	18.96	19.65	20.33	21.02
K		268	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

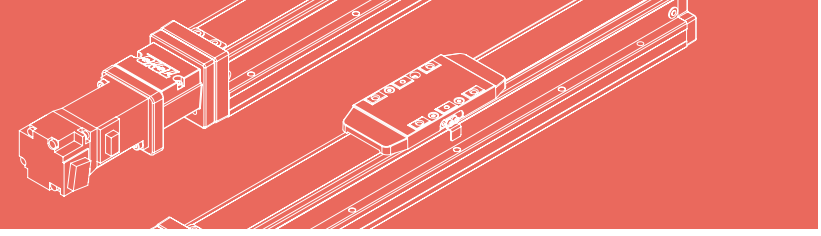
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

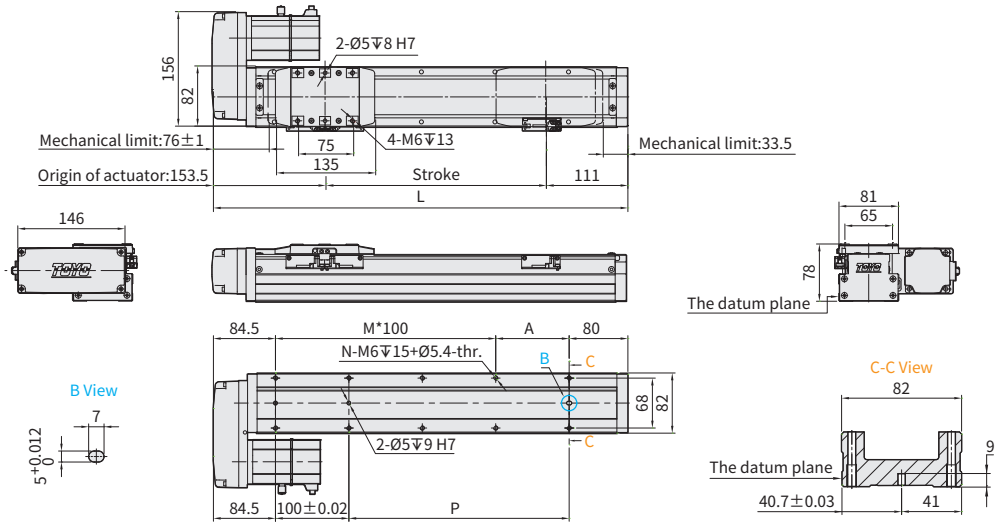
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm



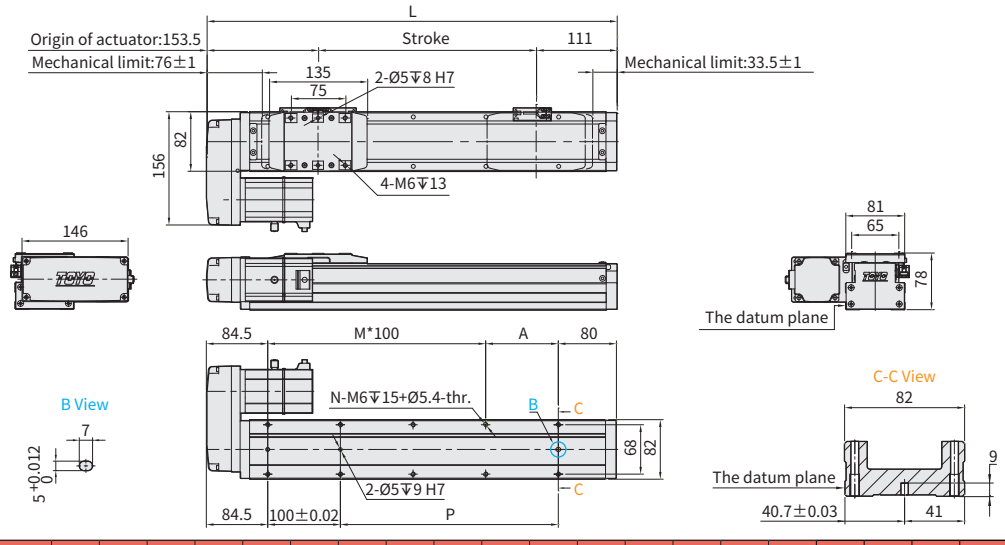
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com

Unit : mm



Stroke		□50 *2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
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※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
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GTH5
GTH8
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GTH12M
GTH5S
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GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K

GTH8K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Please consult our company website for a detailed description on selection requirements and nominal life calculations.

Ordering Method

GTH8K - L10 - 100 - BC - M40B - C4 - 0001

Model

Special Order No.

Ballscrew Accuracy Grade

L	Rolled Ballscrews
C	Ground Ballscrews

*C precision-level ground ball screws are not available in all stroke lengths, please consult the model datasheet.

Ball Screw Lead

5	5mm
10	10mm
20	20mm

Stroke

Rolled Ballscrews	
50-1100mm (50mm increments)	
Ground Ballscrews	
50-700mm (50mm increments)	

Motor Position

BC	Motor Exposed
BM	Motor Bottom Side
BL	Motor Left Side
BR	Motor Right Side
-*2	No Motor Position

Attachment kit for motor

With Attachment kit				
M	Mitsubishi	05	-	B*3
P	Panasonic	10	-	
Y	Yaskawa	20	-	
T	Delta	40	400W	
57M635	57□ Shaft Ø6.35			
57M800	57□ Shaft Ø8			
X	Others *1			
Without Attachment kit				
K	No Motor Flange & Coupling *2			

*1 When choosing non-standard motor X, the motor spec must be provided and confirmed by TOYO for installation before the order is established.

*2 When K is selected the motor position section is left blank.

*3 If No Brake,No Description.

Home Sensor

Outside	
C	Motor Side
D	Opposite Motor Side
No Sensor	
E	No Sensor

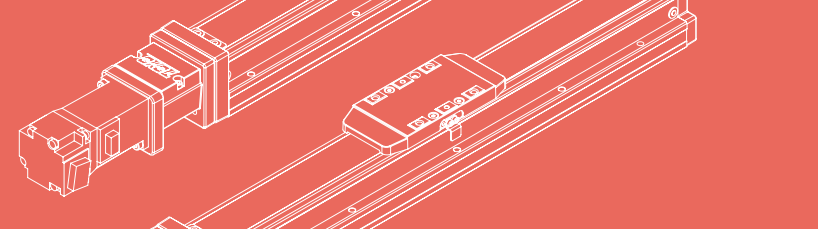
*When the stroke is 50mm, the sensor installation has the following restrictions:

1.The home sensor and the limit sensor must be installed on different sides of the body.

2.The sensor trigger device must be installed on both sides of the device.

Limit Sensor

Outside	
3	1 Pc
4	2 Pc
No Sensor	
5	No Sensor



Specification

Item						
Item	Ball Screw Spec.	Ballscrew Accuracy Grade Code			L	C
		Ballscrew Accuracy Grade			C7 Rolled Ballscrews	C5 Ground Ballscrews
		Repeatability		mm	±0.005	±0.003
		Stroke (increments)		mm	50-1100mm (50 increments)	50-700mm (50 increments)

Item							
Item	Ball screw	Outer dia. & Precision grade		mm	Ø16 & C7 Rolled Ballscrews		
		Lead		mm	5	10	20
		Maximum Rotating speed※1		rpm	3600	3600	3600
		Maximum linear speed※1		mm/s	300	600	1200
		Basic dynamic load rating Ca		N	8042	6300	4152
		Basic static load rating Coa		N	15088	11596	7439
		Load factor			1.2	1.35	1.35
	Linear Guide	Dynamic horizontal	100 Km of travel	N	18620		
			1000 Km of travel	N	8643		
			10000 Km of travel	N	4012		
		Static horizontal		N	34230		
	Fixed bearing	Basic dynamic load rating Cr		N	2600		
		Static load rating Cor		N	4750		
	Common Spec	Start torpue		N.cm	10		
		Allowable input torque		N.m	2.2		
		Maximum acceleration		m/s^2	10		
		Friction coefficient			0.03		
		Ambient temperature※2		°C	0~+40		

※1 The maximum rotating and linear speed has changed due to differences in the lead. The ball screw has a slightly axial runout with a longer stroke and the speed must turn down. (Please read the diagram below for dimensions of the linear speed)
※2 For extreme temperatures: -20C ~80C special greases are required.

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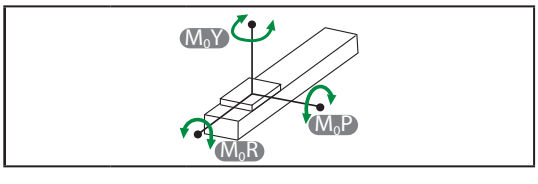
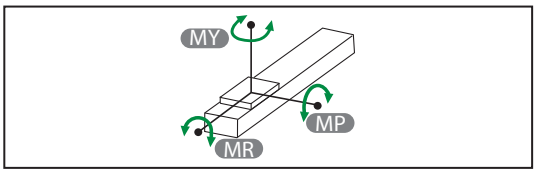


M_0Y	N.m	318
M_0P	N.m	318
M_0R	N.m	626

Dynamic Loading Moment



Travel	km	100	1000	10000
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MP	N.m	121.6	56.5	26.2
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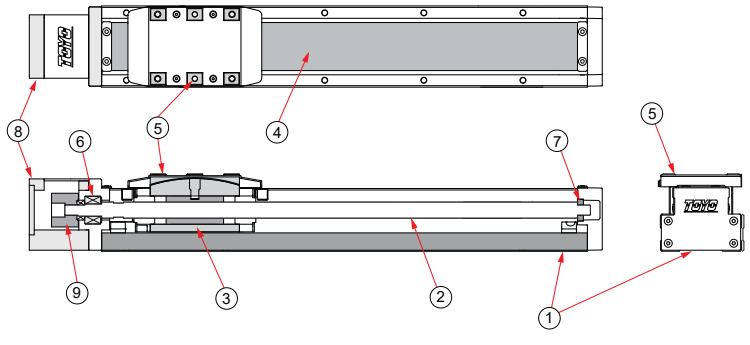

No.	Part Description	Material
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3	Ball Screw Nut	S45C
4	Steel Band	SUS430
5	Carriage	SNCM21H
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GTH5K
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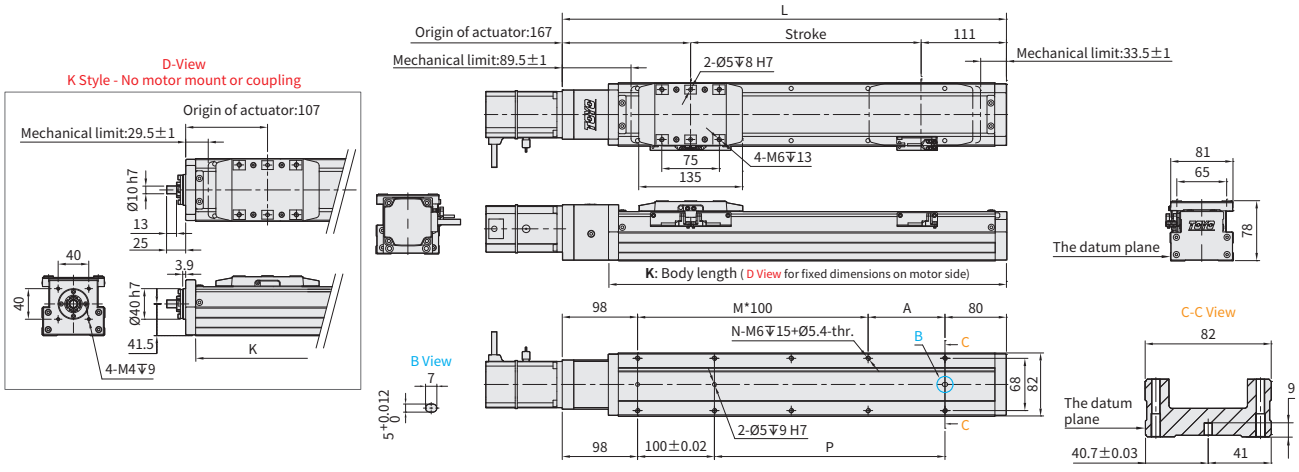
GTH8K

▶ Integrated Linear Bearing ▶ Ball Screw Drive

Unit : mm

BC Motor Exposed 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		328	378	428	478	528	578	628	678	728	778	828	878	928	978	1028	1078	1128	1178	1228	1278	1328	1378
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.62	7.31	7.99	8.68	9.37	10.05	10.74	11.42	12.11	12.79	13.48	14.16	14.85	15.54	16.22	16.91	17.59	18.28	18.96	19.65	20.33	21.02
K		268	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
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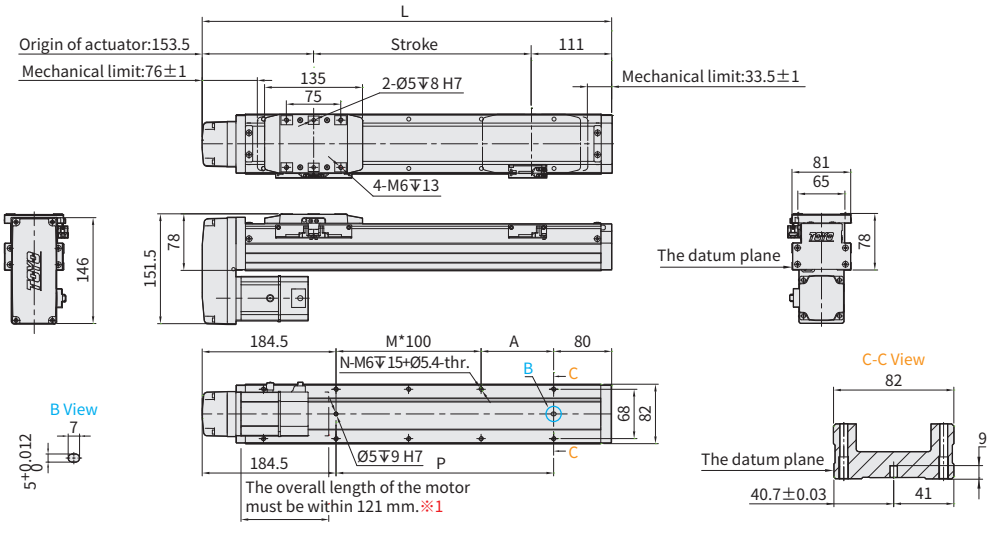
※1 KG refers to the weight with motor related accessories (excluding motor), not corresponding to K Type.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

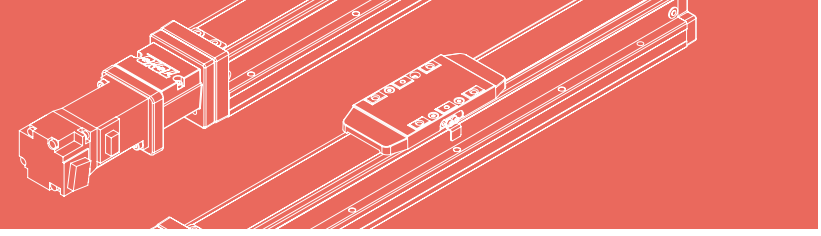
Unit : mm

BM Motor Bottom Side 2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
N		4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

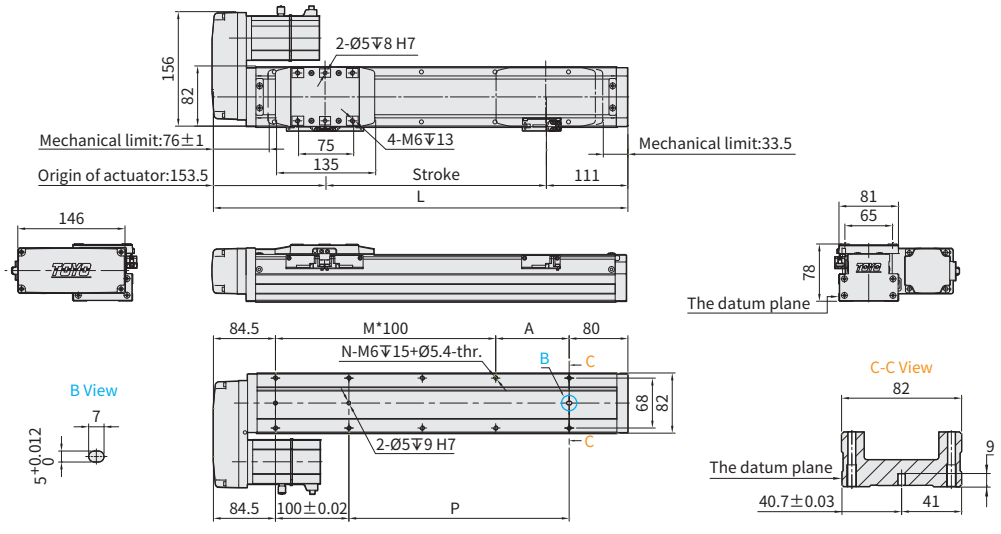
※1 When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact our sales department if you need more information & requirement.
※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.



Unit : mm

BR Motor Left Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



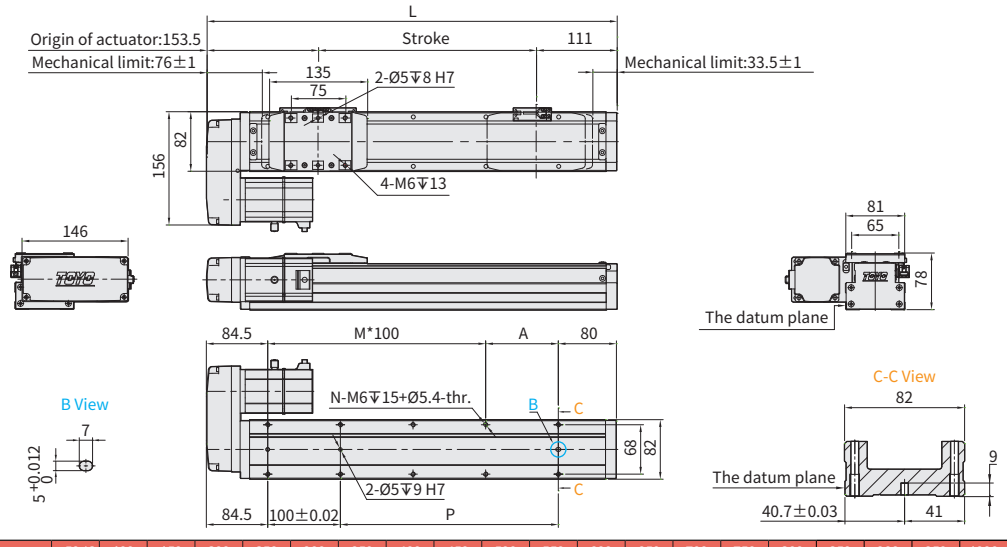
Stroke		50※2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L		314.5	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

Unit : mm

BL Motor Right Side

2D CAD 3D CAD Download CAD data at www.toyorobot.com



Stroke		□50 *2	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Limit Stroke (±1)		70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
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A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
KG※1		6.66	7.35	8.03	8.72	9.41	10.09	10.78	11.46	12.15	12.83	13.52	14.20	14.89	15.58	16.26	16.95	17.63	18.32	19.00	19.69	20.37	21.06
Linear Speed mm/s	Lead 5	300												292	250	250	225	200	175	150	133	117	108
	Lead 10	600												583	500	500	450	400	350	300	267	233	217
	Lead 20	1200												1167	1000	1000	900	800	700	600	533	467	433

※2 When the stroke is 50mm, if fixing the body from the top to the bottom, the fixing hole will be blocked by slider and only can be uses 4 screws to fix;as a result, suggest that fixing actuator body from the bottom to the top.

GTH Series
GTH3
GTH4
GTH5
GTH8
GTH12
GTH12M
GTH5S
GTH8S
GTH4D
GTH5D
GTH8D
GTH12D
GTH3K
GTH4K
GTH5K
GTH8K